



# Fiscal Year 2017 Final Report

## Wachusett Reservoir Direct Discharge Elimination Project

### What is Stormwater Runoff?

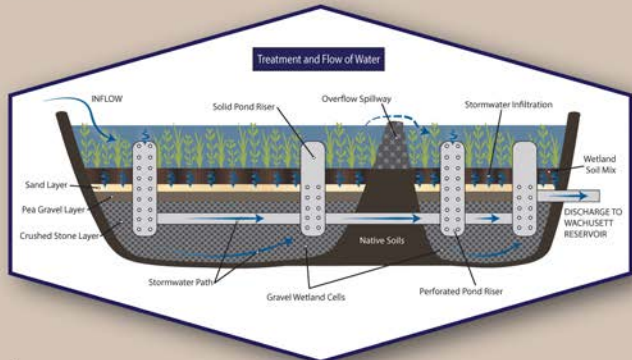
Stormwater runoff is generated from rain events and snowmelt that flow over land and impervious surfaces like pavement or rooftops. The stormwater runoff picks up pollutants like trash, chemicals, nutrients and oils that can harm our lakes, rivers, streams, and coastal waters. Stormwater runoff carrying accidental spills from hard surfaces like streets, parking lots and driveways can threaten drinking water stored in surface reservoirs. Additionally, nutrients such as nitrogen and phosphorus which are found in animal wastes, fertilizers and faulty septic systems, are a significant source of pollution to nearby water bodies. Excess nutrients degrades water quality - a process referred to as eutrophication.

### How can you help?

Pick up after your pet and dispose of waste • Use slow release fertilizers and apply only in appropriate concentrations • Apply pesticides and herbicides according to manufacturer specifications • Properly dispose of grass clippings and leaf litter • Wash cars on pervious areas that do not drain to catch basins • Maintain equipment and vehicles to prevent leaks and drips • Properly maintain all septic systems

### What was constructed and why?

This project is an engineered subsurface gravel wetland with several accidental spill containment areas. It is designed to collect stormwater runoff from approximately 9-acres of impervious areas around the reservoir. This stormwater treatment system contains accidental spills entering storm drains, and uses wetland vegetation, soils, bacteria and natural processes to remove key stormwater pollutants including nitrogen and phosphorus, mimicking a natural wetland system. The Massachusetts Department of Conservation and Recreation is charged with protecting the reservoir and the watershed lands around it to ensure a clean drinking water supply. Removing pollutants from stormwater entering the drinking water source and containing potential accidental spills from roadways improves the water quality, ecological health and overall protection of the Wachusett Reservoir. With proper maintenance, this subsurface gravel wetland will treat approximately 11 million gallons of runoff per year.



Educational poster made for stormwater project on Sterling Street adjacent to Wachusett Reservoir.

September 2017

Massachusetts Department of Conservation and Recreation  
Division of Water Supply Protection  
Office of Watershed Management

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# **FY2017 Accomplishments**

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FY2017 End of Year Highlights**

**Wachusett/Sudbury Region**

**A. Land Procurement**

Five parcels were acquired in the Wachusett Reservoir watershed totaling 111 acres (86.5 acres in WPR; 24.6 in fee) at a cost of \$624,000. These figures include both MWRA and federal Forest Legacy funded projects. Due diligence and negotiations are ongoing with approximately 32 MWRA/LAP approved projects across the system.

**B. Watershed Preservation Restrictions**

Monitoring of Watershed Protection Restrictions continued. As noted above, WPRs were acquired on an additional 86.5 acres in the Wachusett Reservoir watershed this fiscal year.

**C. Land Management**

The comprehensive Land Management Plan and all internal reviews have been completed. Public meetings are scheduled for first quarter FY18.

Eight proposed timber sales on 392 acres were presented to the public after completing the internal review process. Nine proposed timber sales on 550 acres were reviewed internally for consistency with the Land Management Plan including verification of vernal pools, assessment of wildlife and review by the DCR Archaeologist. Following internal review, the lots were put out for public review.

Seven lots on 388 acres were prepared for sale. Eight lots on 454 acres were sold. Supervision occurred in 12 lots on 591 acres of which 6 lots on 225 acres were completed. All active lots were monitored by forestry staff who coordinated with EQ staff to collect water quality samples where work was conducted near resource areas.

One full host removal operations took place on 14 acres of DWSP land as part of the DCR Asian Long-horned Beetle Program.

Nineteen miles of boundary line were inspected and maintained. All new fee acquisitions were assessed, mapped and integrated into existing land management and public access programs.

**D. Wildlife Management**

The gull harassment program was conducted successfully; there were no exceedances of the fecal coliform source water standard. Harassment activities were conducted for 27 weeks and weekly summary reports were produced. A pilot Full Reservoir Harassment Program was conducted from 10/17/16 to 11/06/16, with a goal of completely eliminating birds from roosting on the reservoir. EQ and NR staff has recommended attempting this approach, as the current program while maintaining water quality standards still allows thousands of birds to roost

overnight on the southern end of the Reservoir, contributing waste products to the reservoir. The pilot was successful and possible expansion will be considered in FY18.

Natural resources staff continued work to reduce overall gull population by monitoring regional feeding areas and installing exclusion wires when problem areas were identified. Additional wildlife control actions were taken for geese, beaver, muskrat and burrowing animals. Research on common loons and cooperative studies with DFW on eagles and reservoir Lake Trout were conducted.

#### **E. Public Access Management**

Watershed Rangers continue to patrol the watershed. In FY17 over 16,000 visitor contacts were tallied with 788 rule violations noted. Thirty-one written warnings were issued and 41 non-criminal citations were issued.

#### **F. Watershed Security**

Ranger staff continues to maintain an active presence in the watershed. All Wachusett/Sudbury staff informs Rangers of any unusual activities.

#### **G. Infrastructure Maintenance**

All Wachusett and Sudbury dams, spillways and dikes were inspected monthly. DCR continued coordination with MWRA on all issues. A geotechnical evaluation of River Road in Clinton determined that extensive slope stability work is required before any repairs can be made. Reservoir 2 toe drain contract awarded and was completed in the spring. A contract for a design of a new Clinton crew headquarters and an addition to the Maintenance Garage to handle larger equipment repairs was begun with completion in FY18.

#### **H. Watershed Protection Act**

Wachusett staff continued to implement the Watershed Protection Act (WsPA). All WsPA applications were reviewed and decisions issued within timeframes as required by the regulations. Building permits and property transfers for watershed communities were reviewed to identify properties affected by the act, and notify owners of WsPA jurisdiction.

Work was completed by the Office of General Counsel to revise the WsPA regulations to meet DCR classification code. Public hearings were held in the fall of 2016 and the revised regulations, 313 CMR 11.00, were promulgated in February 2017.

#### **I. Interpretive Services**

Interpretive services staff provided programs as outlined in the annual work plan. Information kiosks were updated, and two professionally designed and built interpretive signs were installed at the stormwater treatment basins north and south of the Causeway. Environmental Quality section staff supported the Mass Envirothon. The Ranger staff conducted 37 education programs

with a total attendance of 1,144. Total attendance for two Clinton Dam Days was 2,330. The Fall issue of the *Downstream* newsletter was published and distributed.

### **J. Water Quality Sampling and Water Quantity Monitoring**

Routine samples for bacteria, specific conductance, turbidity, and temperature were collected from 19 stations on 18 tributaries. Nutrients and total suspended solids were collected monthly from 10 of these stations. More than 175 Wachusett Reservoir algae samples were collected, filtered and analyzed under a microscope. Weekly water column profiles and monthly nutrient samples were collected. Thirty years of historical Secchi disk data for the reservoir was compiled and quality checked.

All new tributary data are automatically uploaded regularly into the Aquarius database and EQ Water Quality Database. Working with UMass Amherst Civil and Environmental Engineering Department, significant improvement were made to the database allowing additional capability to analyze data. This work will continue in the next fiscal year.

Stream flow was monitored with ten USGS continuous stream gauges throughout the watershed. Additional streamflow data was provided by continuous water level recorders at eight additional tributary locations. Streamflow measurements were conducted and ratings curve developed for each site. Wachusett EQ staff also groundwater, snow pack, and precipitation was monitored regularly to describe watershed hydrology.

The 2016 Water Quality Report was completed and posted on the DCR webpage.

### **K. Watershed Monitoring and Surveillance**

Inspections and investigations of potential water quality threats were conducted by Environmental Quality staff. These activities are recorded and tracked in the EQ Data Base. During the Fiscal Year, 279 new EQ files were creating which included 47 with 313 CMR 11.04 jurisdiction. Weekly EQ activity reports were distributed detailing monitoring activities. GIS map showing the location of these new files was generated.

### **L. Aquatic Invasive Species Management**

No new AIS species were found within the reservoir this Fiscal Year. Ongoing management was conducted in the Lily Ponds, South Meadow Pond, and Clamshell Pond, as well as assistance to MWRA DASH contract removals in Stillwater Basin.

### **M. Environmental Quality Assessments**

The Worcester District Environmental Quality Assessment (EQA) was completed last Fiscal Year (scheduled for this FY), Reservoir District was completed and draft Gates District is underway. Recommendations from the EQAs were incorporated into the FY18 Work Plan.

Progress was made incorporating geographic information (GIS) into the EQAs. Streams and Wetlands datalayers were improved based on comparison with orthophotos and field

investigations. A major project to route flow through sub-watersheds (using drainage structures previously digitized) was begun; and the Waushacum sub-watershed is approximately 90% complete.

#### **N. Wastewater Management**

EQ staff worked with local Boards of Health to review septic system repairs and new installations, and received sewer connection information from West Boylston. CE staff continued to provide management and support, with MWRA, of Rutland-Holden trunk sewer and Rutland Holden Relief trunk sewer.

#### **O. Stormwater Management**

Construction of the stormwater improvements for the Causeway crossing of the Reservoir was completed in May. The remaining two projects, Beaman Street Bridge and South Bay, were combined into a single project by MassDOT. Work began in May and is projected to be complete in May 2018. .

EQ staff inspected all stormwater BMPs in the Reservoir Subbasin as part of the EQA. All active construction sites with Construction General Permit were inspected in both wet and dry weather. All DCR stormwater treatment BMPs were inspected and maintained as needed.

#### **P. Emergency Response**

Emergency response training was held and attended by Wachusett staff and area responders; 108 people attended 4 trainings. A tabletop exercise was conducted with 61 participants.

#### **Q. Support**

Wachusett GIS provided products to internal DCR staff and provided GIS assistance to watershed. A new GIS Director was hired in the Division which will expand staff capabilities.

Payments in Lieu of Taxes, totaling \$8,190,986, were completed to all eligible watershed communities; \$4,242,635 was distributed to Wachusett and Sudbury towns.

Staff continued to work to fill vacancies in the Section. At the end of the fiscal year there were several vacancies including a Maintenance Equipment Operator, three Laborer IIs, and a Carpenter I.

## **Quabbin/Ware Region**

### **A. Land Procurement**

Acquisitions completed this year in the Quabbin and Ware River watersheds included 96 acres in fee and 498 acres of Watershed Protection Restrictions, for a total of 594 acres. Approximately 379 acres of this total were acquired through the Forest Legacy Program. Due diligence and negotiations are in progress on twelve other projects.

### **B. Watershed Protection Restrictions**

Staff monitored 26 WPRs in the Quabbin/Ware watersheds with plans underway to increase monitoring with use of EQ and Forestry staff. Five baseline WPR reports were contracted out for completion, with baseline reports for six other new WPRs still to be completed. Land ownership changes were tracked, and meetings were held with successor landowners. Several minor issues with landowners were resolved satisfactorily.

### **C. Land Management**

The Comprehensive Land Management Plan was in the final stages of review at the end of FY17. The BMP protocol was adapted for DWSP forestry projects and implemented at one stream crossing.

Foresters prepared 19 new lot proposals, which included mapping, subwatershed analyses, and cultural resource protection measures. Seventeen forestry lots were sold, and 18 miles of reservation boundaries were maintained. Forestry staff also supervised active harvest operations and maple sugaring permits.

Regeneration data was collected and photo points were created on forestry lots. GIS data layers were updated on a regular basis, as new information became available. Administrative work related to the forestry program was completed, including processing of revenues, permit issuances, public notifications, etc.

Known populations of rare plants were visited, and databases were updated accordingly. In addition, several areas in the Quabbin Reservoir watershed were identified for prioritization for possible habitat restoration and invasive species control. Follow-up invasive species control was conducted on the two Wildlife Habitat Incentive Program sites as need. Staff conducted field surveys and mapping of terrestrial invasive plants, and draft site plans for controlling these invasive species in these areas are being prepared.

EQ staff continued both their short-term and long-term water quality monitoring program at forestry sites, and produced regular database updates. Storm sampling was conducted four times at long-term monitoring sites.

Watershed maintenance staff cleared land at the site of the new maintenance building for a new septic system and a water supply well. In addition, staff performed field and road mowing as well as gravel pit management.



#### **D. Wildlife Management**

Efforts to manage gulls and geese were conducted, which included the gull harassment program from October through March. Data on nocturnal roosting areas at the Quabbin Reservoir were used to inform the gull harassment program. Staff also continued to monitor potential gull food sources, such as waste water treatment plants, landfills, and parking lots. Surveys for goose nests were conducted, and eggs were treated. Goose activity was discouraged in the Pathogen Control Zone using fencing, coyote decoys, and modifying mowing plans.

Beaver were removed from the Pathogen Control Zone, and fecal samples were collected for *Giardia* and *Cryptosporidium* analysis. The samples in FY17 were negative for both of these organisms. In addition, work to prevent beaver-related flooding issues included monitoring and maintaining culverts, maintaining culvert fence guards, and repairing beaver-deceiver piping. The beaver dam that was affecting a USGS gauging station was removed by hand after the required environmental permits were obtained.

Research and monitoring of Common Loon and Bald Eagle nesting at the Quabbin Reservoir continued. Eleven active eagle nests were documented, of which seven were successful and produced ten chicks. A lead sinker collection program was implemented to collect old lead sinkers for recycling. This program was publicized through information signs and fliers.

The annual Quabbin Controlled Deer Hunt was administered by DWSP staff. The use of scanners for more efficient check-in/out of hunters was implemented during scouting and the hunt. A final report summarizing biological data obtained from the hunt was completed. In addition, staff produced a report summarizing ten years of moose sighting data collected during the deer hunts.

The status of select wildlife species were also monitored. Monitored species included bats and Whip-poor-wills, and other work included the long-term monitoring of beaver on the Prescott Peninsula and population density estimates of deer and moose. Pellet surveys were conducted in New Salem and Hardwick, and the survey of the entire Quabbin Reservation is now complete.

#### **E. Public Access Management**

Information on access policies and regulations was distributed through the Quabbin Visitor Center and through numerous public contacts by the watershed rangers. The rangers logged approximately 18,900 visitor contacts during FY17.

New signs were produced for various locations around the watersheds, and numerous existing signs were updated to reflect the watershed protection CMR numbering change from 350 to 313. Kiosks were also updated with new maps and informational materials.

The three Quabbin Boat Launch Areas (BLAs) operated daily from July through mid-October, 2016, and then again from mid-April through June, 2017. BLAs collected a combined revenue of \$226,187 from 29,841 paid visitors. The boat inspection and decontamination program was implemented again this year, with both boat washings and cold weather quarantines overseen by DWSP staff.

EQ staff conduct regular inspections through EQA fieldwork that occasionally uncover recreation-related water quality concerns. These concerns are analyzed and mitigated as needed. DWSP staff also collaborated, educated, and monitored public access issues around the Massachusetts Central Rail Trail.

Staff hosted a number of special events during the year, including the monthly “Tuesday Teas” for former valley residents and Memorial Day services at the Quabbin Park Cemetery.

Staff provided support and maintained the boat launch at Comet Pond. In addition, they supervise and support the needs for portable toilet availability at the BLA’s and during the Quabbin Controlled Deer Hunt including the two day scout.

The Quabbin Visitor Center issued short-term access permits to almost 400 individuals or groups during FY2017. Research permits were issued, renewed and/or monitored as needed.

Work continued on the update to the Quabbin Reservoir Watershed Public Access Management Plan. The plan is expected to be completed during the first half of FY2018.

## **F. Watershed Security**

The watershed rangers conducted regular patrols of high-vulnerability areas around the reservations, and weekly summaries were submitted to MWRA. Rangers logged 437 violations and issued two written warnings, as well as nine non-criminal citations. In addition, one lifetime revocation of fishing privileges was issued.

Inspections of gates and barways on the reservations were performed and necessary repairs made.

Interactions and coordination with the State Police, Environmental Police and other enforcement personnel continued throughout the year.

Staff helped coordinate logistics and operations for the power, security, and communications upgrades project. Work in FY17 was extensive, and included installation of over four miles of overhead cabling and poles, as well as more than a half mile of underground conduit. Work also included security enhancements, such as remote monitoring capabilities, additional lighting, and alarm systems.

## **G. Infrastructure**

Civil engineering staff performed and reported on monthly inspections and piezometer readings. Two dam compliance inspections were completed. DWSP staff conducted mowing, brush-cutting, and other maintenance operations on dams and dikes.

A number of routine building maintenance projects were completed during the year, including repairs to mechanical controls; repair or replacement of plumbing fixtures; and mitigation of asbestos-containing materials in the Hangar overhead doors.

Inspections or testing of septic systems and drinking water sources at the various administration buildings were conducted, and the annual Public Water Supply report was completed. In addition, engineering staff coordinated logistics and sampling for a diver-assisted cleaning and inspection of the water storage tank for the Administration building.

The woodchip heating system in the Quabbin Administration Building operated for 77 days and burned approximately 150 tons of woodchips. The heating system also burned approximately 18,000 gallons of oil. Fuel oil storage tanks were replaced at the Ware River field office and the Ranger Station.

Maintenance staff conducted repair work on the Administration building, deer hunt shacks, BLA buildings, and cemetery buildings. Work in the Administration building included repairing the chimney and waterproofing the roof. Staff also remodeled the interior of the Ranger Station building.

Routine grounds maintenance was completed in Quabbin Park, including field mowing, weed-whacking, and the removal of a number of hazardous trees or limbs. In the Quabbin Park Cemetery, staff prepared for Memorial Day by repainting the flagpoles and the cannon, as well as numerous plantings. Staff assisted with eleven burials in the cemetery. In addition, staff replaced the water line that supplies irrigation water to the cemetery.

Road work during the year included the access roads to BLA 1 and BLA 2. These contracts are almost complete. The work on the BLA 1 road included full-depth reclamation, reconstruction, and resurfacing of the gravel entrance road. The BLA 2 road work included drainage pipe replacements, and pavement reclamation is planned for this road as well.

Road work performed by DWSP staff included clearing roadside brush, cleaning drains, and filling potholes in Quabbin Park. In addition, five to six miles of watershed roads were also scraped, graded, and partially graveled by DWSP staff.

Gravel pit inventories were completed for the Ware River watershed. DWSP staff also monitored gravel extractions and responded to gravel pit issues.

## **H. Watershed Protection Act**

Staff implemented the Watershed Protection Act through the review of applications, site visits, meetings with applicants and their representatives, holding variance hearings, and the issuance of decisions. During the fiscal year, there were a total of 24 WsPA cases; these included 18 advisory rulings, four determinations, and two variances.

Staff worked with local boards and building inspectors about WsPA issues, especially where development activity was of particular concern. Staff also monitored MassDEP cases and followed up on abutters notices sent to DWSP regarding development projects. In addition, EQ staff regularly attended Conservation Commission meetings in selected watershed communities.

Work was completed by the Office of General Counsel to revise the WsPA regulations to meet DCR classification code. Public hearings were held in the fall of 2016 and the revised regulations, 313 CMR 11.00, were promulgated in February 2017.

## **I. Interpretive Services**

The Quabbin Visitor Center was operated for 358 days during FY17, with approximately 17,778 visitors. Eighty educational programs were offered to more than 3,770 students. In addition, 38 general public programs were offered for approximately 960 participants. Staff handled more than 6,700 phone inquiries.

Displays in the Visitor Center and the satellite site at the Quabbin Tower were updated. Kiosks at the BLAs and other locations were updated. Staff planned and coordinated trail work by volunteers with the Student Conservation Association. IS staff continued their assessment of trails in the Quabbin Park area and identified maintenance needs.

The DCR website was regularly updated with new information about the Quabbin Controlled Deer Hunt, fishing programs, AIS, meeting announcements, and the boat decontamination program.

## **J. Water Quality and Quantity Monitoring**

Routine reservoir and tributary water quality monitoring work continued, data were entered in databases, and reports were produced. Plankton monitoring in the reservoir was performed on a monthly and bimonthly basis, depending on the season. Monitoring for AIS in tributaries and other water bodies was conducted according to the monitoring schedule, and *Didymo* sampling was reduced based on recent research. The 2016 Water Quality Report was completed and distributed, and work began on the 2017 report.

The gull harassment program operated from October, 2016 through March, 2017. Weekly reports were submitted to MWRA and an annual report on the program submitted to MassDEP.

Data on precipitation, reservoir elevations, water transfers and releases, and runoff were collected, recorded, and distributed on a daily basis. Staff conducted inspections near Shaft 8 when notified of impending diversions from the Ware River.

EQ staff collected baseline, harvest, and post-harvest samples from forestry sites, and NR staff collected monthly water quality samples from the long-term forestry monitoring sites.

## **K. Watershed Monitoring and Assessment**

Staff regularly conduct site assessments, attend local board meetings, and monitor online databases to identify potential threats to water quality. Staff investigated various potential violations in the watersheds and followed up as needed.

The YOPs for vegetation management work on both the National Grid and Providence & Worcester Railroad rights-of-way were reviewed, and comment letters were submitted.

As part of EQA work, online databases related to releases of oil or hazardous materials, as well as closed landfills, were reviewed. A survey of agricultural operations that could impact water quality was also conducted as part of EQA fieldwork.

#### **L. Aquatic Invasive Species**

Staff provided AIS information to the public through visitor contacts, displays in the Visitor Center, the DCR website, presentations to local organizations, visits to Long Pond and Comet Pond, and distribution of brochures during Boat Decontamination and Cold Weather Quarantine programs.

The boat decontamination program continued in FY17. Approximately 130 boats were logged in the cold weather quarantine part of the program, and approximately 260 boats were washed for hot water decontamination. EQ staff performed QA/QC on the boat seal database, and worked to implement a more automated process for the boat seal program.

The boater self-certification program at Comet Pond and Long Pond continued in FY17. Staff also provided a letter of support for AIS removal at Hardwick Pond, located approximately 2.5 miles from the Quabbin Reservoir.

DWSP staff assisted in the 2016 macrophyte survey on the Quabbin Reservoir. Staff also inspected and maintained the fragment barriers at BLA 2 and BLA 3. Other work included inspecting gear and equipment prior to use in the reservoir for construction projects.

#### **M. Environmental Quality Assessments (EQAs)**

Staff completed EQA reports of the East Branch Swift River and East Branch Ware River Sanitary Districts. The reports included AIS survey results for these areas. Staff also began or continued implementation of recommendations in EQA reports.

#### **N. Wastewater Management**

No water quality issues were identified from septic systems, and the oversight provided in Title 5 was generally sufficient.

#### **O. Stormwater Management**

No NPDES applications were submitted during FY17, but staff advised local boards on stormwater issues as appropriate.

#### **P. Emergency Response**

Emergency Response Instructions and Contact lists were updated and distributed to DWSP staff, MA-SP, C Troop, DCR Emergency and Management, MWRA Managers and MEMA State Control. RD and ARD share weekend Emergency Contact assignments throughout the year. Digital radio conversion project was completed.

The emergency response trailer repair project was completed. Staff completed an inventory of supplies and requested new supplies as needed. Staff also coordinated with MWRA on the purchase of new storage units at the BLAs.

Staff responded to several minor (non-reportable) spills during the year, including the plane emergency landing on a sandbar in the reservoir. Staff followed up with DEP, MSP, EPOs and/or local police, when appropriate.

Several spill response training sessions were held in conjunction with MWRA and local fire department personnel. In addition, spill response plans were produced for new timber harvesting operations.

### **Q. Support**

Interpretive Services staff fulfilled 121 requests for genealogical information, 22 requests for vital records, and 56 other requests for photographic or other materials.

Payments in Lieu of Taxes, totaling \$8,190,986, were completed to all eligible watershed communities; \$3,890,818 was distributed to Quabbin and Ware towns.

Staff participated in a wide variety of job-related trainings and workshops, interagency planning teams, and professional organizations.

# **FY2017 Work Plan Final Summary**

## Wachusett/Sudbury Region FY2017 Final Report

### Key to Abbreviations

**Wachusett/Sudbury Staff:** A=Administration; CE=Civil Engineers; EP=Environmental Planning; EQ=Environmental Quality; F=Forestry; GIS-W = Geographic Information Services Wachusett; IS=Interpretive Services; RD=Regional Director, Assistant Regional Director; WM=Watershed Maintenance; WR=Watershed Rangers

**Boston/Division Staff:** A=Administration and Finance; D= Director; Director's Staff; NR= Natural Resources; GIS=Geographic Information Services; P= Environmental Planning

Task	Task Description	Lead	Product	Percent Complete	Comments
<b>A. Land Procurement</b>					
1.	Coordinate due diligence and other tasks/services from DCR and private contractors to complete survey, appraisal, title, engineering, and environmental assessments for proposed acquisitions. Negotiate WPR language, purchase prices and conditions of sale with sellers of property.	NR	Protected land	100%	Five closings in Wachusett watershed totaling 111 acres (86.5 acres in WPR; 24.6 in fee) at a cost of \$624,000. These figures include both MWRA and federal Forest Legacy funded projects. Due diligence and negotiations ongoing with approximately 32 MWRA/LAP approved projects across the system.
2.	Develop individual parcel presentation materials and meet with MWRA Board for approval.	NR	Protected land	100%	Parcels were presented to the MWRA BOD on four occasions within FY17.
3.	Convene LAP meetings to review parcels and prioritize land purchases.	NR	LAP Recommendations	100%	LAP convened twice during FY17.
4.	Work with the North Quabbin Regional Landscape Partnership to acquire land and WPRs with a Quabbin to Wachusett (Q2W) Forest Legacy Grant.	NR	Protected land	100%	Forest Legacy projects that closed totaled 452.7 acres at a cost of \$875,000. Due diligence, negotiations, and solicitations are ongoing for an additional nine projects.
5.	Continue to solicit and work with landowners in donating conservation interests in land and assist in advising landowners on the tax incentives available when donating conservation interests.	NR	Ongoing communications	100%	One Wachusett 12.5 acre WPR acquisition this FY was a donation prompted by the MA Cons. Land Tax Credit
6.	Establish regularly scheduled land/legal meetings to address attorney assignments and project logistics.	NR	Meetings	50%	Challenges continue to get projects assigned and completed in a timely fashion due to staffing limitations.



Task	Task Description	Lead	Product	Percent Complete	Comments
<b>B. Watershed Preservation Restrictions</b>					
1.	Complete baseline inspections for all new WPRs prior to acquisition or within reasonable time after acquisition using established protocols and modern technologies. Make baseline inspection reports available to appropriate staff	NR	Report	50%	Contracted out five baseline documentation reports for Forest Legacy WPRs. Due to capacity issues, did not have time to contract or complete any other baseline documentation reports. At the end of FY17, there were eight recently-acquired WPRs that needed baselines – six in Quabbin and two in Wachusett.
2.	Monitor each WPR every two years; monitor high-priority ones annually.	NR	Monitoring reports Updated hydrology layer	30%	Monitored 37 WPRs through the year. 95 out of 132 total WPRs were not monitored in FY17.
3.	Post WPR boundaries, as time allows.	NR	Posted boundaries	0%	Time did not allow WPR boundary posting.
4.	Track changes in land ownership and meet with successor landowners as necessary.	NR	List of landowners and meetings	100%	Six transfers (three Wachusett, three Quabbin), two deaths of a spouse (one each, Wachusett and Quabbin), two new managers of town-owned land (one Wachusett, one Ware), and one death of only owner (Quabbin). Staff met with successor landowners as part of monitoring; it makes monitoring take longer, but is excellent for preventing violations. Answering questions from potential new owners has also taken a lot of time, but is also important for preventing violations.
5.	Write and distribute <i>Watershed Currents</i> , the WPR Landowner newsletter, twice a year.	NR	Newsletter	100%	Summer and Winter issues were written and distributed.
6.	Convene WPR Working Group as needed and confer with legal to respond to enforcement issues and requests to exercise reserved rights.	NR	Issue Resolution and reserved rights decisions	100%	Work is ongoing, but did not require convening the WPR Working Group.
7.	Maintain an accurate GIS layer and Excel database of WPRs and distribute to appropriate staff.	NR	Excel spreadsheet and GIS layer	100%	Work is ongoing. Worked with new GIS Coordinator to update MassGIS Open Space data.
8.	Participate in EOEEA-wide stewardship database planning efforts as necessary.	NR	Statewide database	20%	Work is ongoing, but very little time spent on the project.
9.	Continue to implement WPR records procedure with DCR records manager.	NR	Securely stored records	50%	Work is ongoing.

Task	Task Description	Lead	Product	Percent Complete	Comments
<b>C. Land Management</b>					
1.	Implement the system-wide Comprehensive Land Management Plan (CLMP).	F	Annual Review	85%	Presentation prepared for internal and public forums; presentation of the CLMP will occur in September 2017 with public review to follow; implementation limited to existing plans and From Here Forward.
2.	Conduct periodic reviews and monitoring of land management activities to assure compliance and consistency with Land Management Plan.	NR	Review memo	0%	No additional reviews needed this FY.
3.	Prepare summaries of proposed forestry lots.	F	Lot Summaries	100%	Eight proposed timber sales on 392 acres were presented to the public after completing the internal review process.
4.	Review lots to ensure consistency with aspects of the CLMP, including wildlife, forestry objectives, and environmental quality.	NR	Annual lot reviews, comments	100%	Internal review completed on eight Wachusett and one Sudbury watershed lots proposed for forestry activities in FY2018. Over 50 vernal pools were visited on Forestry lots across the active watershed system.
5.	Hold public meeting(s) on proposed forestry lots. Accept public comment.	RD	Meeting minutes	100%	FY18 public meeting held in June
6.	Prepare, sell and supervise forest management operations in the Wachusett and Sudbury watersheds consistent with the CLMP.	F	Annual statistics on harvest area, inspection reports	100%	Seven lots on 388 acres were prepared. Eight lots on 454 acres were sold. Supervision occurred in 12 lots on 591 acres of which six lots on 225 acres were completed.
7.	Monitor water quality at active logging sites to measure effectiveness of DWSP's Conservation Management Practices (CMPs).	EQ	Water quality data in Forestry Database	100%	Ten sites with 17 stream crossings were visited monthly. A total of 86 samples were collected during 186 individual location visits. Turbidity of all samples was measured and data stored in a spreadsheet. Draft summary reports for ten completed operations were written.
8.	Conduct a regeneration survey of all silvicultural openings on DWSP land in the Wachusett watershed	F	Summary Report	95%	All data has been collected, entered into the database and analyzed. A draft report has been written. The final report will be produced soon.

Task	Task Description	Lead	Product	Percent Complete	Comments
9.	Implement restrictions and recommendations by NHESP for forest management operations in habitat of rare plants or animals.	F	Cutting plans and forestry database	100%	All restrictions and recommendations by NHESP were implemented.
10.	Continue work with DCR Asian Longhorned Beetle Program and USDA to oversee beetle eradication in watershed areas.	F	Meetings, cutting plans	100%	One full host removal operation took place on 14 acres of DWSP land.
11.	Identify and implement terrestrial invasive management projects. Respond as needed to newly discovered and controllable populations of terrestrial invasive species.	F	Completed projects	100%	Ongoing.
12.	Conduct annual invasive species control on current Wildlife Habitat Incentive Program (WHIP) project and other identified areas as needed..	NR	Contract, contract work	100%	NR conducted follow-up treatments on re-sprouts at Riis Hill and the Williams Property.
13.	Inspect all DCR fields with agricultural permits.	F	Inspection Reports	100%	Ongoing inspections occurred throughout the season.
14.	Monitor the status, and/or assess impacts, of selected wildlife species, including deer, beaver, migratory birds, water birds and vernal pool inhabitants. Coordinate with the Massachusetts Natural Heritage and Endangered Species Program concerning rare species occurrences and protection	NR	Field notes, reports	100%	Cooperative efforts continued with the Massachusetts Natural Heritage and Endangered Species Program to monitor and protect rare species on the watersheds. Several additional vernal pools were certified in the Wachusett watershed as part of the annual NR Vernal pool certification project. The Wachusett North Dike habitat mowing plan was continued this year with successful breeding by several grassland bird species including special concern species like bobolink, eastern meadowlark and kestrels.
15.	Continue boundary line maintenance.	F	Update GIS layers and encroachment database	100%	19.2 miles of boundary line were maintained.
16.	Seek to resolve known encroachments. Incorporate newly found encroachments into the process	WR	Update encroachment database	100%	Work continues on encroachments when found. Most are resolved quickly

Task	Task Description	Lead	Product	Percent Complete	Comments
17.	Assess all new fee acquisitions to document the existing condition of forests, roads, and boundary markings. Integrate new properties into existing land management and public access programs.	F	Update relevant databases and GIS layers	100%	All new fee acquisitions have been assessed, mapped and integrated.
18.	Pursue final disposition of lands surrounding Framingham Reservoirs 1 and 2.	D	Disposed property	80%	Several meetings were held with DCR Planning and Park personnel regarding transfer of lands around Stearns and Brackett Reservoir (Framingham #1 and #2). All DCR staff subsequently met with DEP representatives of the Nyanza Natural Resources Damages Trust to discuss transfer and management of \$540,000 management grant. Work is in progress to develop a Request for Responses for a contract to write a Resource Management Plan, paid for through the NRD grant, in preparation of transfer. There was also a meeting in April with the Massachusetts Public Access Board to discuss potential boat ramp sites.
19.	Maintain DWSP wildlife fields through regular mowing; keep accurate mowing records.	WM	Maintained Fields	100%	Regular annual mowing of fields
20.	Analyze reservoir bluff erosion monitoring results, develop recommendations to reduce and/or mitigate	EQ	Report with recommendations	100%	Conducted measurements in September and December. Report with recommendations completed.
21.	Identify DWSP areas that would benefit from habitat restoration, invasive species control, or periodic maintenance using newly acquired mulching machine.	NR	Acres of habitat restored	100%	Cut down several of the trees separating the field from the apple orchard at Riis Hill. Put the remaining trees out to bid. This will open up the remaining acreage. Several areas were identified and prioritized for possible habitat restoration at Wachusett and Quabbin. Additionally some new Pollinator habitat was created/restored at Wachusett.
22.	If available, use UAS (unmanned aerial systems) to document forest conditions, map openings, identify invasive plant populations or other activities	NR	Updated forest data	0%	No activity this period. Pending approval to use this tool.

Task	Task Description	Lead	Product	Percent Complete	Comments
23.	Maintain deer exclosures and sample vegetation periodically to assess impacts of herbivore browsing.	NR	Report	50%	No survey work on the exclosure vegetation has been completed in the Wachusett watershed.
<b>D. Wildlife Management</b>					
1.	Conduct program of observation and active harassment of gulls, geese, and other waterfowl.	EQ	Birds are moved out of control zone.	100%	The Bird Harassment Program was conducted from 8-22-16 to 4-28-17. No violations of EPA water quality standard occurred.
2.	Implement a pilot full reservoir harassment program to test its effectiveness in preventing birds from roosting on the reservoir.	EQ	No birds are allowed to roost on the reservoir	100%	The Full Reservoir Harassment Program was conducted from 10-17-16 to 11-06-16. It was determined that, at least for that time period, it is possible to keep the reservoir bird-free.
3.	Produce weekly report during active Bird Harassment Program season.	EQ	Weekly report	100%	31 Weekly Reports were produced and distributed.
4.	Observe and document the nocturnal roost of gulls on the reservoir weekly during the months of September- March	NR	Data used to guide harassment program	100%	Weekly roost observations continued through the month of March due to a high number of birds (2,700). By mid-April, the number of gulls had significantly declined (<200). In May, Gull program was suspended and there were less than 10 birds seen at the gull roost.
5.	Control Canada Geese populations by treating eggs during nesting to prevent hatching.	NR	Annual report	100%	Eleven nests with 65 total eggs were treated at Wachusett. 25 nests with 135 eggs were treated at the Sudbury Reservoir. Annual reports completed for Wachusett, Quabbin, and Sudbury.
6.	Monitor geese activity on the North and South Dikes. Implement control activities as needed including coyote decoys, habitat management practices or harassment to limit goose presence.	NR	Limited number of geese on dikes	100%	Installed coyote decoys to discourage geese from gathering on grass areas adjacent to the reservoir. The wildlife mowing schedule was followed to discourage goose activity on the dikes. Monitoring was done to assess the success of the mowing.
7.	Monitor area landfills for feeding gulls. Work cooperatively with landfill operators to ensure DEP landfill regulations are being followed.	NR	Field reports	100%	Monitoring continued of landfills, mall parking lots, and wastewater treatment plants for gull feeding activities.

Task	Task Description	Lead	Product	Percent Complete	Comments
8.	Monitor waste water treatment plants in Massachusetts that have wires installed to prevent feeding to make sure they function and continue to exclude gulls. Identify other wastewater treatment plants in MA with gulls and work to install wires at those plants.	NR	Controlled treatment plants	100%	Monitoring continued and exclusion wires are functioning to deter gulls from feeding in wastewater treatment tanks.
9.	Identify parking lots in MA where food is available and work to prevent feeding through educational signage, interaction and enforcement.	NR	Controlled parking lots	100%	Monitoring of parking lots continued to identify areas where gulls are being fed.
10.	Investigate using social marketing techniques to influence people feeding gulls.	NR		50%	Monitored parking lots for feeding and increases in gull numbers. Spoke to people that were seen feeding gulls. No other techniques used. EQ staff distributed gull brochure at six Envirothon workshops and three community outreach events.
11.	Work with cities and municipalities in MA to enact regulations to make feeding gulls illegal. Work cooperatively with these communities to educate feeders and/or enforce feeding regulations.	NR	Reduction in feeding of gulls	100%	Efforts continue with local communities to enforce or enact regulations to make the feeding of gulls illegal. Efforts have continued to educate feeders not to feed gulls.
12.	Continue to identify alternative food sources for gulls in MA and work to eliminate their presence.	NR	Food sources eliminated	100%	Efforts continued to identify alternate food sources for gulls. No new sources of food were detected on our surveys.
13.	Work with MIT to identify bacteria carried by gulls in central MA.	NR	Publication	0%	No activity this year-results pending.
14.	Remove beaver and muskrat in the Aquatic Wildlife Pathogen Control Zone and assist with removal of nuisance individuals in other areas when possible. Utilize habitat modifications to discourage the presence of aquatic mammals.	NR	Field reports, annual summary	100%	Monitoring continued in the Aquatic Wildlife Pathogen Control Zone and nuisance beaver areas within the watersheds. All streams within the Aquatic Pathogen Zone were surveyed. Completed annual summary for Wachusett and Quabbin. Two beaver were removed from Hasting's Cove. No samples taken.

Task	Task Description	Lead	Product	Percent Complete	Comments
15.	Analyze all aquatic mammals removed from Pathogen Control Zone for the presence of <i>Giardia</i> and <i>Cryptosporidium</i> by sending stool samples to a private lab for analysis.	NR	Summary report	100%	Fecal pathogen samples were sent out to be tested by Analytical Service, Inc for <i>Giardia</i> and <i>Cryptosporidium</i> . All results came back negative.
16.	Use genetic markers to assist in identifying contamination sources in water samples.	NR	Sample identification	100%	Information on in-reservoir water sampling for both Quabbin and Wachusett was sent to the microbial source contractor so they could identify contamination sources in the reservoir. The first samples were sent out from Wachusett to the lab with encouraging results. DCR plans to use this survey method wherever feasible and appropriate.
17.	Respond to beaver complaints from citizens affected by beaver on DWSP property; provide assistance as time allows.	NR	Assistance to homeowners	100%	Breached a dam at the railroad culvert on Twine Rd in the Wachusett Watershed.
18.	Respond to beaver caused flooding issues on DWSP property; assess situation and take appropriate actions.	NR	Field reports	100%	Monitored culverts with past beaver issues continued. Mitigation efforts were made to clean culverts and repair fencing-beaver deceiver piping. The beaver dam affecting the USGS gauging station was removed by hand and heavy equipment will be used later to remove some of the larger tree debris.
19.	Respond to problems of burrowing animals on dams and dikes; take appropriate action.	NR	Field report	100%	North Dike was surveyed and all animal burrows were treated.
20.	Continue long-term wildlife resource monitoring program to document wildlife response to forest management.	NR	Data base, Report	100%	Conducted long-term monitoring on amphibians, breeding birds, bats and small mammals at sites scheduled to be harvested.
21.	Research and manage for common loons on DWSP water bodies in Wachusett watershed; provide nesting platforms, capture and sample birds for contaminants.	NR	Annual Report	100%	Loon research and monitoring on the DWSP water bodies continued. Completed annual report for Wachusett and Quabbin. Canisters were installed to collect old lead sinkers for recycling and informational posters about the DWSP lead tackle and fishing line recycling program were posted at fishing areas.
22.	Work with DFW to survey for and document breeding bald eagles on the reservoir.	NR	Field Report	100%	Monitoring for eagle nesting activities and banding eagle chicks. At Wachusett there was one eagle nest with two chicks.

Task	Task Description	Lead	Product	Percent Complete	Comments
23.	Work with DFW to collect and tag spawning Lake Trout in the reservoir.	EQ	Field Report	100%	Staff coordinated with DFW to capture, measure, and tag nocturnally spawning lake trout in October and November. This is the third year of this sampling and nearly 300 lake trout have now been tagged and released.
24.	Conduct pellet surveys on DWSP lands in Wachusett/Sudbury to assess populations of deer and moose.	NR	Annual report	100%	Pellet Surveys were completed in Quabbin Reservation this year. An Annual Report was completed. The technique was shared and completed at DCR's Great Blue Hills Reservation.
<b>E. Public Access Management</b>					
1.	Proactively patrol watershed lands to ensure compliance with DCR regulations and Policies. Tally visitor contact and produce quarterly and annual summary reports. Conduct trend analysis on visitor statistics and rule violations.	WR	Reports	100%	Visitor Contacts: 16,337 Rule Violations: 788
2.	Continue to cooperate with state, environmental, and local police for help with enforcement when required.	WR	Enforcement Resolution	100%	Ongoing.
3.	Continue to use Agency social media accounts for advertisement of interpretive programs, including general information or emergency information (such as closings).	WR	Press documents	100%	Ongoing
4.	Develop public outreach regarding allowed uses on DCR Wachusett lands	WR	Plan, signage, outreach	100%	Ongoing
5.	Continue updates and improvements to access points with signs, gates and improved parking areas. Conduct regular inspections of gates and access barriers.	WR	Signs, barriers	100%	EQ placed signage at two locations during the direct discharge project explaining stormwater, improvements and the project.
6.	Continue to implement Wachusett and Sudbury Public Access Plan policies, as necessary	WR	Compliance with DWSP regulations	100%	Ongoing
7.	Continue to conduct "special operations" such as night operations, ATV, and snowmobile operations, as needed.	WR	Compliance with DWSP regulations	100%	Ongoing. Night operations at both watersheds were productive.



Task	Task Description	Lead	Product	Percent Complete	Comments
8.	Enforce Rules and Regulations of CMR 313 11.09 through the use of citations. Issue written warnings and/or non-criminal citations for repeat offenders and serious violations.	WR	Compliance with DWSP regulations. Update database.	100%	Written Warnings: 31 Non-Criminal Citations: 41
9.	Provide dog waste brochures to all sportsmen's clubs and at Trout Brook Recreation Area	EQ	Brochures	0%	EQ spoke with Holden Recreation Director; no kiosks or bulletin boards at Trout Brook and determined not effective at Sportsmen's Clubs.
<b>F. Watershed Security</b>					
1.	Maintain an active presence in the watershed. Monitor watershed lands, roadways, and railways for unusual or suspicious activities; provide appropriate response.	WR	Ranger logs	100%	Ongoing patrols and monitoring
2.	Continue ongoing communication and coordination with local, state, and federal emergency responders; coordinate with MWRA on all security issues.	WR	Ranger logs	100%	Ongoing. Continue working with local EPO and MSP.
3.	Continue program of enhancing security infrastructure around Wachusett Reservoir.	RD	Implementation	100%	Ongoing work to harden gates and access points as needed.
<b>G. Infrastructure</b>					
1.	Assess Wachusett and Sudbury dams, spillways, and dikes monthly. Forward all significant issues to the Regional Director and the MWRA. Coordinate with MWRA on biannual dam safety inspections for compliance with 302 CMR 10.00.	CE	Inspection logs and reports, summary reports	100%	Monthly assessments were conducted.
2.	Assess DWSP smaller dams semi-annually and develop maintenance plans.	CE	Plans, summary reports	100%	Dams were assessed.
3.	Continue maintenance plans for the improvement of the Wachusett and Sudbury dams and dike structures. Monitor conditions and maintenance activities and revise plans, as necessary.	CE	Inspection reports, summary reports	100%	Maintenance and mowing plans were developed and work conducted.
4.	Implement Wachusett Watershed-wide Road Management Plan.	CE	Road Projects	100%	CE and EQ coordinated to plan upgrade of access road to long-term forestry site.

Task	Task Description	Lead	Product	Percent Complete	Comments
5.	Conduct annual inspection/evaluation of Wachusett internal roads, access points, and shoreline; update GIS data layers as needed.	CE	Maps	100%	Roads were evaluated for maintenance needs.
6.	Develop annual plan for internal road repair projects.	CE	Plan	100%	Work plan was developed.
7.	Finalize design and implement drainage improvements on River Road in Clinton.	CE	Report, Plan, schedule	0%	GZA report indicated extensive (\$3 million) slope stability work is required. This work should take place prior to any drainage work. The existing drainage structures have been inspected and a road stability monitoring program has been implemented.
8.	Conduct projects using in-house staff and resources. Provide oversight to ensure protection of water resources.	WM	Projects	100%	Several internal roadway drainage projects were completed.
9.	Evaluate need for new stormwater BMPs on DCR properties. If needed, design and install stormwater BMPs for new projects and retrofit into existing sites.	EQ	Stormwater treatment BMPs	30%	Improvements to remove sediment in Gates Brook in vicinity of Woodland Street are being permitted, with implementation using in house forces (same as Task O-10). Preliminary designs were completed for Direct Discharge locations at Parker Street in Clinton and on Route 110 in Sterling.
10.	Oversee regular maintenance of all DWSP BMPs. Monitor construction of stormwater treatment basins at Causeway and develop O&M plan.	EQ	Effective stormwater treatment; maintenance log	100%	BMPs inspected twice annually and following large storm events; non-routine maintenance requests have been submitted.
11.	Implement Road Management Plan for Sudbury watershed internal roads.	CE	Inspections, projects	50%	Some additional roads were inspected. The road vegetation has recently been cut back allowing more thorough inspection.
12.	Provide supervision, coordination, oversight, and technical support or assistance for all engineering, construction, and renovation work in Section.	CE	Inspections, construction and maintenance records	100%	Oversight was provided for engineering projects.
13.	Maintain records regarding reservoir and facility construction and maintenance operations.	CE	Miscellaneous records	100%	Survey plans were recorded at the Registry. Updating of the scanned plans database has been completed.

Task	Task Description	Lead	Product	Percent Complete	Comments
14.	Implement annual Major Projects including: <ul style="list-style-type: none"> <li>Reservoir 2 Toe-drain repair</li> <li>River Road drainage improvements</li> <li>Wilson St Garage upgrades</li> <li>Clinton Yard Paving.</li> </ul>	RD	Improvements	50%	Reservoir 2 toe drain was completed. Design of crew headquarters and maintenance garage addition initiated. No drainage improvement to River Road proposed due to costs. No paving in Yard – will wait until new building completed.
<b>H. Watershed Protection Act</b>					
1.	Continue implementation of the WsPA. Review and track all WsPA applications and activity in database. Issue decisions within timeframes as required by the regulations.	EP	WsPA Decisions	100%	All applications received decisions within the required timeframe.
2.	Convene the Watershed Protection Act Working Group regularly to discuss policy and address specific problems related to the WsPA	P	Coordination, decisions, meeting minutes	100%	WsPAWG met three times this fiscal year: 10/27/16, 1/27/17, and 6/26/17. Worked with General Counsel on updates of Watershed Protection Regulations. Major change was switching prefix to 313 in order to align with other DCR regulations; minor changes made that reflect past 20 years of WsPA implementation. Public hearings held on September 13, 15, 20, and 22. One set of comments received. The revision to the Watershed Regulations were completed and promulgated as 313 CMR 11.00 on 2/24/17. Information on the regulatory update, including a fact sheet describing the changes, were posted on the WsPA web page. Updated information, including maps and lists of affected parcels, will be distributed to watershed communities.
3.	Review permits for watershed towns on a monthly basis with letters sent to property owners of affected parcels.	EP	Letters to Property Owners of Affected Parcels	100%	Building permits for the five towns were reviewed through June 2017.
4.	Review property transfers for seven towns on a monthly basis with letters sent to new property owners of affected parcels informing them of the WsPA and how they may obtain additional information.	EP	Letters to Property Owners of Affected Parcels	88%	New property owners through May 2017 have received letters. June 2017 will be done in FY18.

Task	Task Description	Lead	Product	Percent Complete	Comments
5.	Review previous files on an ongoing basis, including contact with owners and site visits as needed.	EP	Follow-up Letters	85%	All files back to 2000 have been reviewed and updated in the WA section of the database to state if the project is ongoing or completed. Letters were sent as needed. Some follow up needs to be done for these files that had letters sent to owners and the owners responded with some information or plans. Some of this new information has been reviewed and resulted in a Notice of Completion being issued to the owner and/or the file closed. However, some of this information still needs to be reviewed and possible correspondence sent to inquire about the status of the work.
6.	Provide Town Halls with WsPA maps, brochures and applications on a regular basis.	EP	Inventory of needs and inventory of information that was distributed.	100%	An inventory was completed of dates of Town Hall visits, materials passed out and information requested from the Towns. Several towns requested a new "List of Affected Parcels." This list was completed and will be given to the towns by October 2017.
<b>I. Interpretive Services</b>					
1.	Re-write Interpretive Plan to reflect current issues and resource needs for watershed education.	IS	Plan rewritten	100%	Plan rewritten, waiting for final approval of Regional Director
2.	Inspect kiosks and brochure boxes quarterly, submit work orders, and update as necessary.	WR	Updates on Kiosks at least quarterly	100%	EQ information on kiosks only updated summer 2017 because information was still pertinent and in good condition over the fall and winter. Interpretive board explaining structural BMP (Rte 62/140) replaced by a more permanent sign.
3.	Analyze and update current brochures. Determine need for new brochure topics and develop as needed.	IS	Brochures	100%	Aquatic Invasive Brochure written. Three brochures reviewed and revised. EQ continued to distribute Phosphorus brochure until June; distribution on hold pending upcoming changes in regulation.
4.	Partner with other organizations on watershed programs	IS	Programs	100%	Coordinated and offered five programs with various partners

Task	Task Description	Lead	Product	Percent Complete	Comments
5.	Continue watershed, wildlife, forests, and history educational programs in the local school districts.	IS	School Programs	100%	Continued existing programs and expanded to additional schools.
6.	Continue regular programming at Stillwater Farm.	IS	Programs	100%	Ongoing public programs offered at Stillwater Farm by WR & IS
7.	Continue to provide educational materials and support for Mass Envirothon.	EQ	School Programs	100%	EQ staff attended 12 Steering Committee meetings, provided six student workshops and one full day coaches' workshop, updated the water section of the Envirothon manual and website, wrote the water station test, and ran water ecostation at competition.
8.	Continue education efforts through visitor contacts and formal presentations.	WR	Programs, visitor contacts	100%	37 Historical Presentations/School Programs were conducted with 1,144 attendees. Two Clinton Dam Day events were held with 2,330 attendees.
9.	Publish bi-annual <i>Downstream</i> newsletter.	NR	Newsletter	80%	Published fall edition with lead article on watershed advisory committees. Spring edition delayed until fall 2017.
10.	Maintain and update website.	P	Website	100%	Updated as needed. Worked with DCR and MassIT on transition to new web design.
<b>J. Water Quality and Quantity Monitoring</b>					
1.	Continue weekly sampling of 19 tributaries for bacteria, turbidity, temperature, and specific conductance. Continue monthly sampling for nutrients and TSS at 10 tributaries.	EQ	WQ data entered into Aquarius software	100%	Sampling at all locations completed as scheduled. Created an auto import tool to handle MWRA data imports into new Water Quality database. Hydrologic data continues to be entered into Aquarius
2.	Continue weekly or more frequent sampling of the reservoir for plankton, pH, temperature, and dissolved oxygen. Conduct reservoir transect sampling, as necessary, in conjunction with gull harassment program.	EQ	WQ data entered into Aquarius software	100%	More than 175 Wachusett Reservoir algae samples were collected, filtered and analyzed under a microscope. Weekly water column profiles were collected. Thirty years of historical Secchi disk data for the reservoir was compiled and quality checked.
3.	Consider need for groundwater sampling to provide additional information to assess water quality issues; and conduct as needed.	EQ	WQ data entered into Aquarius software	100%	Groundwater monitoring provided in conjunction with USGS is adequate for now.

Task	Task Description	Lead	Product	Percent Complete	Comments
4.	Produce annual water quality summary and sampling plan.	EQ	Annual WQ report by March 15	100%	Water Quality Report completed and posted online. Water Quality database improved; statistics can be run grouped by distinct time periods.
5.	Maintain continuous stream flow gages in all four watersheds through USGS contract. Coordinate with USGS to ensure proper performance of all gages, and accurate and timely reporting of data. Import gage data to Aquarius.	EQ	Instantaneous hydrology information	100%	Managed contract with USGS; held progress meeting 10/25/16. Moved Gates Brook gauge downstream. Data in Access database. Beaver dam removal at Quinapoxet River and West Branch Swift completed.
6.	Augment hydrologic data in Wachusett watershed through establishment of additional stream gages, rain gages, and snow pack measurements. Establish new gage at Quinapoxet Reservoir outlet; reconfigure control structure on Muddy Brook and recalculate flow. Enter all data in Aquarius and maintain accurate rating curves	EQ	Rating curves, data in Aquarius	100%	Updated rating curves developed for tributaries. Discharge measurements for rating curve maintenance ongoing. New gauge at Quinapoxet Reservoir not feasible due to property limitations. Muddy Brook control re-established and discharge measurements underway. Only one snow pack measurements made due to lack of snowfall.
7.	Determine needs for stormwater sampling based on FY16 work. Sample storm events as determined necessary.	EQ	WQ data entered into Aquarius software; annual nutrient loading calculations	75%	Review and analysis of data is ongoing using new functionality of database. All stormwater samples have been identified in Access database. All flows to correspond with samples have been calculated/gathered and stored in Access database. Next step is the analysis. Recommendations on future sampling will be developed during FY2018.
8.	Continue to work with UMass to use results of reservoir and watershed runoff water quality models to help to make watershed management decisions.	EQ	From UMass: Input on DCR projects and issues; UMass summary reports From DCR: data summaries	100%	Completed 2015 model. UMass model used to examine alternative Quabbin transfer scenarios and the impact to Chrysophyte algae growth conditions in Wachusett reservoir. Worked with Wachusett EQ staff to develop enhanced water quality data base, coordinated with Quabbin.
9.	Identify and outline system-wide water quality issues. Bring to ResOPs and/or WQSAT for discussion and integrate into water quality modeling work with UMass.	EQ	Issues	100	Coordinated with MWRA to develop agenda, attended meetings, made presentations.

Task	Task Description	Lead	Product	Percent Complete	Comments
10.	Continue to implement long term monitoring in paired sub-basins in order to assess impact of forestry on water quality.	EQ	annual report summarizing data and activities	33%	Monthly dry weather samples collected when flow was present. Quarterly wet weather samples collected in the fall and the spring.
11.	Incorporate new Turner C3 in routine reservoir monitoring. Use to develop background water quality data for possible petroleum contamination.	EQ	data	33%	Awaiting equipment from MWRA. DCR took delivery of Turner sondes and laptops from MWRA. Joint training session held with MWRA and DCR staff. Need to clarify how to best use and incorporate into monitoring program.
12.	Develop water quality summary for periodic distribution (monthly ) to Director, MWRA, other interested parties	EQ	summary	75%	Summary completed last year; needs to be revised to include flows from HOBO stations.
13.	Work with MWRA, Quabbin EQ, NEIWPCC and other stakeholders to characterize cyanobacteria and cyanotoxins in the reservoir	EQ	Info in annual WQ report	100%	Regular toxin samples collected at Cosgrove Intake jointly by DCR and MWRA staff.
<b>K. Watershed Monitoring and Surveillance</b>					
1.	Continue to review local records and conduct watershed surveillance to identify potential water quality problems. Work with local boards and land owners when problems are identified. Document work in EQ data base.	EQ	Document actions in EQ database; compliance with regulations	100%	A new EQ file is create when staff investigate activities with the potential to impact water quality. 279 new files were created during the FY. Of these, 47 had WsPA jurisdiction.
2.	Review and analyze Data Base Records. Compare with other data (water quality, GIS etc.) to evaluate watershed management programs.	EQ	Data, analysis, maps, reports	100%	Corrections made in EQ database to errors in data entry. Improvements made to the structure of database based on user requests and in the interest of efficiency.
3.	Develop new EQ database reports to summarize and assess monitoring and surveillance activities	EQ		100%	Made improvements to SM and WA pages, added enhancements to location tabs allowing for former parcels to be added as well as other minor enhancements and bug fixes to database.
4.	Add files to database for commercial or industrial sites with information on hazardous materials or other threats, add files for all USTs	EQ		100%	Hazardous waste generator status added to existing files and additional 27 files created. Nine files created for registered USTs. Six created for hazardous materials on site (town wells). Thirty one created for chemicals stored or used on site not regulated under any other program.

Task	Task Description	Lead	Product	Percent Complete	Comments
<b>L. Aquatic Invasive Species</b>					
1.	Inspect reservoir, lakes, ponds and tributaries for presence of AIS and make appropriate recommendations for management action.	EQ	Annual summary in water quality report	100%	No new AIS species were found within the reservoir. Nine locations were surveyed by DCR staff by snorkeling. Ongoing management within Lily Ponds, South Meadow Pond, and Clamshell Pond was continued with surveys, outreach, treatment recommendations, and coordination with contractors.
2.	Develop and implement plan for dealing with Phragmites by boat cove	EQ	Plan	100%	Phragmites at boat cove was cut in Spring and late Summer 2017. Other Phragmites locations were measured and mapped. Pioneer stands were cut once in late Summer.
3.	Assist MWRA with removal efforts in the Reservoir.	EQ	Annual summary in water quality report	100%	Four active contracts for 2017 work by contractors were reviewed, initiated, and adaptively managed.
4.	Monitor, advise, and assist contractor with any necessary removal operations.	EQ	Annual summary in water quality report	100%	Ongoing oversight and assistance throughout season.
5.	Continue education efforts through formal presentations and visitor contacts.	EQ	Annual summary in water quality report	100%	A Water Chestnut hand pulling event was coordinated and carried out at Clamshell Pond with volunteers from the Rauscher Farm group.
6.	Distribute AIS brochure and implement AIS Educations program .	IS	Brochure; program	100%	EQ staff distributed AIS brochure at six Envirothon workshops and three outreach events.
7.	Monitor beaver activity; if necessary make recommendations to NR for removal where contributing to spread of invasive plants.	EQ	Field Reports	100%	A new bank den was discovered within Lamson Cove and the location was provided to NR staff.
8.	Revise the 2010 Aquatic Invasive Species Assessment and Management Plan.	EQ	Final Report	100%	Completed, published online in FY16
<b>M. Environmental Quality Assessments</b>					
1.	Finalize Worcester District EQA and use recommendations to develop tasks for FY18 Work Plan.	EQ	Final report, FY18 work plan tasks	100+%	Worcester District EQA completed during previous fiscal year. Reservoir District EQA complete and draft Gates Brook EQA underway. Recommendations have been used to develop tasks for Work Plan



Task	Task Description	Lead	Product	Percent Complete	Comments
2.	Update status of agriculture sites, hazardous material sites, hazardous materials spills, USTs and ASTs.	EQ	Updated info in database and EQ files	100%	Approximately 214 agriculture files created from information in previous spreadsheet and new sites. Twenty-five inspections conducted. Sixteen MCP files updated (including one for minor release not DEP regulated), and three new MCP files created. Twenty-one UST files updated with DEP enforcement actions taken for noncompliance; no changes to ASTs. Submitted comment letter to DAR regarding possible change in composting regulations.
3.	Update land use information using most recent orthophotographs.	EQ	Updated GIS layers	100%	Agriculture parcels field verified, land cover layer updated
4.	Create new products (GIS maps, data base reports) to summarize findings; characterize sanitary district, track changes over time	EQ	Maps, reports	100%	I-190 Drainage structures digitized, pipe network and flow data still needed. Work continues of Drainage Structures datalayer and Flow mapping, focus on Waushacum Subbasin Rail Lines datalayer constructed. Power Line datalayer constructed
5.	Develop and implement outreach strategies and programs for topics identified through EQA.	EQ	Brochures, programs	100%	A photoboard has been developed for use at outreach events
6.	Confirm accuracy and make enhancements to Streams2008 and Wetlands2008 datalayers	EQ	Updated datalayers	100%	Ongoing improvements are being made to these datalayers with assistance from GIS staff.
<b>N. Wastewater Management</b>					
1.	Provide plan review and interpretation, if requested, to Boards of Health.	EQ	Plan review, recommendations to boards, applicants	100%	Ongoing coordination.
2.	Obtain sewer connection information from Holden and West Boylston; add to spreadsheet.	EQ	Updated spreadsheet and GIS datalayer	100%	Information obtained from West Boylston and Holden and added to GIS datalayer.

Task	Task Description	Lead	Product	Percent Complete	Comments
3.	Continue to provide management support, with the MWRA, of the Rutland-Holden trunk sewer and Rutland Holden Relief trunk sewer. Coordinate inspections and maintenance projects for the sewer lines. Prepare and submit quarterly bills to the user communities in a timely manner.	CE	Quarterly bills, correspondence with towns	100%	Quarterly bills were issued.
4.	Research and provide sewer management information for legal issues regarding the Trunk and Relief sewer lines	CE	Notes, information	100%	As needed.
5.	Evaluate and manage new trunk line connections. Monitor trunk line for encroachments; resolve any problems.	CE	Permits, regular inspections	100%	There were no new trunk line connections.
6.	Document septic system repairs with file in database and with linked electronic plan/locus map	EQ	Septic system datalayer	5%	Database setup completed to enter wastewater treatment method on inhabited lots. Data entry began.
<b>O. Stormwater Management</b>					
1.	Coordinate with MassDOT for construction of Causeway Drainage Improvements starting end of FY 16	EQ	Stormwater Treatment BMPs	100%	Stormwater treatment basins and other improvements at Causeway completed in May.
2.	Coordinate with MassDOT for construction of drainage improvements to Beaman St. Bridge.	EQ	Design package ready for Bid	100%	Underway, will be complete May 2018
3.	Coordinate with MassDOT for construction of improvements to Rt. 140 along South Bay.	EQ	Design package ready for Bid	100%	Project combined with Beaman St. Bridge, in construction, will complete May 2018
4.	Continue to work with landowners, towns and DCR staff for better maintenance and performance of watershed BMPs.	EQ	Document actions in SM database	100%	DCR BMPs inspected regularly, maintenance conducted as required. Watershed BMPs inspected as part of EQA. Stormwater pollution prevention and BMP maintenance training for labor staff July 2016

Task	Task Description	Lead	Product	Percent Complete	Comments
5.	Work with watershed towns to ensure compliance with MS4 requirements.	EQ	MS4 permit conditions met	100%	Phosphorus brochure distributed until June 2017 and article written for Downstream newsletter. Dog waste video PSA distributed to all local cable access TV stations, link added to DCR website and submitted to Water Environment Federation Storm TV project contest. Developed outreach tote for use by town DPWs (Holden has distributed DCR brochures through use of this tote twice this year). Designed and helped paint photoboard for use at outreach events. All stormwater brochures/information made available at Dam Opening October 2016 and May 2017. Worked with CEI on design for interpretive signage at direct discharge project - includes stormwater pollution prevention info. Continued work with CEI for stormwater technical outreach document for hobby farms; reviewed and commented on Draft Guidance document.
6.	Maintain stormwater conveyance structures map, including connections, as needed.	EQ	GIS data layer	100%	Work continues.
7.	Continue regular inspection of all construction sites greater than one acre.	EQ	ESC maintained and working as designed	100%	There were 181 dry weather and 62 wet weather inspections at 23 locations. Some minor problems were identified but all were resolved.
8.	Continue to monitor stream erosion along Gates Brook	EQ	Bank erosion rates at 4 locations	100%	Field work completed. Report will be developed FY18
9.	Using ArcMap evaluate locations for potential BMP construction on DCR property.	EQ	Watershed wide assessment with recommendations	0	Determined that this is low priority.
10.	Review recommendations from Gates Brook study for BMPs on privately owned properties. Investigate options for construction for those that contribute most sediment to Gates Brook.	EQ	agreements with landowners, BMP engineering design	50%	Improvements to Gates Brook in vicinity of Woodland Street are being permitted, with implementation using in house forces.
11.	Continue work with local DPWs to identify locations of concern, evaluate options for bmp installation, and ways to cooperatively implement recommendations	EQ	Installed BMPs	25%	Initial meeting held with DPWs in November 2016; a few areas have been identified, but evaluating sources of funding for installation through grants, etc.

Task	Task Description	Lead	Product	Percent Complete	Comments
12.	Investigate and apply to DEP for beneficial reuse permit to dispose of stormwater BMPs sediment without use of external contractors.	EQ	Permit, disposal site and operation guidelines	100%	No longer financially beneficial due to vacuum truck contractor requirements for many of the new BMPs.
13.	Continue to work with watershed communities on review and update of local stormwater regulations	EP	Annual report summarizing status	25%	Older review of bylaws was resurrected and review is underway
<b>P. Emergency Response</b>					
1.	Coordinate Emergency Spill Response training with MWRA and local responders.	CE	Trainings	100%	108 people attended four trainings.
2.	Work with ODS, MWRA and local towns to develop and implement exercise programs for Framingham Reservoirs 1 and 2 to satisfy EAP requirements.	CE	Plan	100%	A tabletop exercise was conducted with 61 participants.
3.	Update contact list and information in Comprehensive Emergency Management Plan, EAPs, and other emergency response plans.	CE	Plan	100%	Emergency notification list has been updated. Wachusett maps have been updated.
4.	Organize and maintain emergency response supplies and services.	CE	Inventory	100%	Ongoing and up to date.
5.	Develop and implement Comprehensive Exercise and Evaluation Program incorporating Wachusett Reservoir Railroad Incident Exercise AAR/IP recommendations to enhance Emergency Response training.	CE	Trainings	100%	Trainings on emergency response are ongoing.
6.	Provide ICS and Emergency Response training to appropriate staff.	CE	Classes	75%	A multi-year (FY18- 20) training and exercise plan is being developed. The plan will be finalized and implement in FY18. Various trainings have been planned.

Task	Task Description	Lead	Product	Percent Complete	Comments
7.	Evaluate, monitor and oversee spills that impact or threaten water resources of DWSP property. Work with appropriate local, state and federal agencies to ensure that containment, cleanup, and mitigation of the spill are proceeding in a manner that protects drinking water quality.	CE	Contain and cleanup releases	100%	IS 700 and ICS 100 classes were conducted.
8.	Implement recommendations from Railroad Hazmat release tabletop exercise After Action Report/Improvement Plan including a field exercise in the fall	CE	Field exercise; training	100%	No spills threatened the water resources. EQ developed and provided social media and public information logs and a media management plan.
<b>Q. Support</b>					
1.	Prepare and submit to MWRA and the Water Supply Protection Trust Annual Work Plans, budgets, progress reports, and program goals and objectives. Track Section progress in meeting program goals.	RD	Completed plans, budgets and reports	100%	Completed and approved.
2.	Administer the Payment in Lieu of Taxes (PILOT) program.	P	Payments to watershed communities	100%	FY2017 Payment in Lieu of Taxes totaled \$8,190,986, an increase of 0.8% from FY2016. PILOT to Wachusett and Sudbury communities was \$4,242,635. Staff reviewed information from the Department of Revenue on the 2017 revaluation of State Owned Lands. Analysis provided to DCR management and MWRA.
3.	Continue to support all staff projects and reports by providing GIS maps and training.	GIS-W	Maps, analyses, training	100%	Provided GIS products to DWSP Director, Regional Director, Environmental Quality staff, Rangers, Natural Resources and Engineering Staff
4.	Continue to maintain and regularly update all GIS databases including hydrology, infrastructure, open space, parcels, regulated areas, stormwater structures. Ensure all digital data is current and available to staff.	GIS-W	Databases	100%	All GIS databases were maintained. Updates were made to the internal roads, open space, and the DCR gates data layer.

Task	Task Description	Lead	Product	Percent Complete	Comments
5.	Continue to use GPS to capture and maintain BMP and MS4 data for EQ and parcel boundaries for Land Acquisition. Coordinate use of GPS equipment and download and process all GPS data.	GIS-W	Digital Data	100%	All GPS data has been properly downloaded, processed and maintained. GPS was used to create a manhole data layer and updated the Wachusett sewer line data layer.
6.	Continue to create parcel maps for Land Acquisition Coordinator meetings with landowners, LAP meetings, and MWRA.	GIS-W	Maps, analyses	100%	Maps were created for all Land Acquisition meetings.
7.	Continue to support municipalities and other partners by providing GIS products and technical support.	GIS-W	Maps, analyses, training	100%	Provided GIS support to Wachusett Greenways, Towns of Boylston, West Boylston, Princeton, Sterling and to SP - Central Regional Office.
8.	Operate administrative offices, including answering phones, greeting visitors, etc.	A	Weekly payroll, HR forms processing	100%	Ongoing.
9.	Provide payroll assistance and personnel services for all Section employees.	A	Account set-up, Invoice processing, regular finance reporting	100%	Ongoing.
10.	Provide contract administration, financial management, record-keeping, purchasing of goods and services, and other financial support services.	A	Accounting and financial services	100%	Ongoing, with Prompt Pay discounts received when available.
11.	Coordinate with EEA IT to provide local MIS support for the Section. Update IT Plan as required addressing technology needs for the coming year.	A	Support and troubleshooting services; IT Plan	100%	Ongoing.
12.	Administer Logging Permit program, including mailings, bid openings, financial management, database management, permit and key issuance, etc.	A	Program administration; annual revenue report; database maintenance	100%	Ongoing.
13.	Plan and implement vehicle and equipment purchases and leases.	RD	Vehicle purchases and leases	100%	Several new vehicles and a new 25' boat purchased.
14.	Inspect, provide regular maintenance, and repair vehicles, boats and other motorized equipment.	WM	Work completion	100%	Ongoing.
15.	Provide routine repairs and maintenance to all Wachusett facilities.	WM	Work completion	100%	Ongoing.

# Quabbin/Ware Region Operational Section

## FY2017 Work Plan

### Annual Report

**Key to Work Unit Abbreviations:** ARD = Asst. Regional Director; ATS = Administrative and Technical Support; CE = Civil Engineering; D = Division of Water Supply Protection Director; EP = Environmental Planning; EQ = Environmental Quality; F = Forestry; GIS = Boston GIS staff; IS = Interpretive Services; NR = Natural Resources; P = Planning (Boston); RD = Regional Director; WM = Watershed Maintenance; WR = Watershed Rangers.

**Plan Acronyms:** AIS = Aquatic Invasive Species; AST = Above-ground Storage Tank; BLA = Boat Launch Area; BMP = Best Management Practices; BoH = Board of Health; CMP = Conservation Management Practices; CVA = Chicopee Valley Aqueduct; DCAM = Division of Capital Asset Management; DCR = Department of Conservation & Recreation; DEP = Department of Environmental Protection; DFW = Division of Fisheries & Wildlife; DWSP = Division of Water Supply Protection; EOEEA = Executive Office of Energy and Environmental Affairs; EPA = Environmental Protection Agency; EQA = Environmental Quality Assessment; GCP = General Construction Permit; GIS = Geographic Information Systems; GPS = Global Positioning System; IT = Information Technology; LAP = Land Acquisition Panel; MOU = DCR/MWRA MOU (April 2004); NPDES = National Pollution Discharge Elimination System; MWRA = Mass. Water Resources Authority; OWM = Office of Watershed Management; PAMP = Public Access Management Plan; SOP = Standard Operating Procedure; SWPPP = Stormwater Pollution Protection Plan; TIP = Terrestrial Invasive Plant; TIS = Terrestrial Invasive Species; UST = Underground Storage Tank; WHIP = Wildlife Habitat Incentive Program; WPP = Watershed Protection Plan; WPR = Watershed Preservation Restriction; WsPA = Watershed Protection Act.

Task	Task Description	Lead	Product	Percent Complete	Comments
<b>A. Land Procurement</b>					
1.	Buy/procure land. Coordinate due diligence and other tasks/services from DCR and private contractors to complete survey, appraisal, title, engineering, and environmental assessments for proposed acquisitions. Negotiate purchase prices and conditions of sale with sellers of property.	NR	Protected land	100%	A total of 96 acres were acquired in fee and 498 acres in Watershed Protection Restrictions at a total cost of \$1,438,500, of which \$797,500 was federal or state funded. Due diligence and negotiations are ongoing on twelve other projects.
2.	Complete assessments on all new acquisitions, including descriptions of fire/access roads, bridges, restoration needs, and forest conditions. Integrate these lands into existing land management, public access and other watershed management programs.	F	Completed assessments	100%	Completed for all new acquisitions.
3.	Participate in LAP meetings to prioritize land purchases and provide input into land acquisition decisions in Quabbin and Ware River watersheds.	ARD, RD	Prioritized lists by Region; Input; Advice	100%	Participated in two LAP meetings in FY17.

Task	Task Description	Lead	Product	Percent Complete	Comments
4.	Continue working with the North Quabbin Regional Landscape Partnership in pursuing a Quabbin to Wachusett (Q2W) protected land corridor and other land protection opportunities.	NR	Protected land	100%	Approximately 379 acres of the total land acquired (by fee and WPRs) was through the Forest Legacy program. Due diligence and negotiations are ongoing for nine other projects.
5.	Continue to solicit and work with landowners in donating conservation interests in land and assist in advising landowners on the tax incentives available when donating conservation interests.	NR	Ongoing communications	100%	Ongoing. One 3.3 acres Ware River tract was donated, with the owner using tax incentives.
6.	Establish regularly scheduled land/legal meetings to address attorney assignments and project logistics.	NR	N/A	50%	The effectiveness of this effort to streamline the acquisition process has been limited due to delays in attorney assignments and follow-up.
<b>B. Watershed Preservation Restrictions</b>					
1.	Monitor each WPR every two years; monitor high-priority ones annually.	NR	Monitoring reports; updated land ownership; hydrology layer	30%	Monitored 26 WPRs, but approximately 70% of WPRs were not monitored on schedule due to other priorities taking precedence.
2.	Complete baseline inspections for all new WPRs prior to acquisition or within a reasonable time of acquisition using established protocols and modern technologies. Make baseline inspection reports available to appropriate staff.	NR	WPR baseline reports	45%	Five baseline reports were contracted out, but six recently-acquired baselines were not completed due to capacity issues.
3.	Work towards resolving issues found with landowners, along with the WPR Working Group.	NR	Issue resolution	100%	Work is ongoing, but did not require convening the WPR Working Group. One landowner question in Ware and one enforcement issue in Quabbin required significant staff time; issues were resolved satisfactorily.
4.	Post WPR boundaries as time allows.	NR	Posted boundaries	0%	Other work priorities prevented the posting of WPR boundaries.
5.	Track changes in landownership and meet with successor landowners as necessary.	NR	List of landowners and meetings	100%	Changes were tracked and meetings were held with new owners to answer questions about WPRs.



Task	Task Description	Lead	Product	Percent Complete	Comments
<b>C. Land Management</b>					
1.	Begin implementation of the system-wide Comprehensive Land Management Plan (CLMP) in Quabbin/Ware Region.	F	Current Plans	0%	The CLMP was under review and not yet finalized by the end of FY17. Existing plans are being followed.
2.	Conduct periodic reviews and monitoring of land management activities to assure compliance and consistency with Land Management Plan. Plan and conduct an internal review of proposed logging operations for the coming year including assessments of silviculture, water quality, wildlife, and other potential impacts/benefits of the planned land management activities.	NR	Internal review; Review memos	N/A	No reviews needed this FY.
3.	Design and begin to implement research and monitoring to verify the effectiveness of the existing statewide and DWSP forestry BMPs/CMPs in protecting the water supply.	NR	Reports summarizing effectiveness of BMPs.	50%	The BMP Protocol was adapted for use on DWSP forestry projects, but only one stream crossing was completed in FY17 for implementation.
4.	Collect data and maintain datasets, GIS datalayers and related maps on rare and special plant and animal species or communities. Compile and analyze data on forest structure, composition, and regeneration.	NR	Databases GIS Coverages	100%	All known rare plant populations were visited, and databases were updated.
5.	Conduct terrestrial invasive plant species control on current Wildlife Habitat Incentive Program (WHIP) project on the Ware River Watershed and other identified areas as needed.	NR	Contract	100%	NR conducted follow-up treatments as needed.
6.	Identify areas in Quabbin/Ware Region that would benefit from habitat restoration, invasive species control, or periodic maintenance using newly acquired mulching machine.	NR	Acres of habitat restored	100%	Several areas were identified and prioritized for possible habitat restoration in the Quabbin Reservoir watershed.

<b>Task</b>	<b>Task Description</b>	<b>Lead</b>	<b>Product</b>	<b>Percent Complete</b>	<b>Comments</b>
7.	Prepare lot proposals including data on proposed harvest area, stand data, soils data, cultural resource data, wetlands data, wildlife data, unique features data, and priority habitat data. Proposals also include information on lot layout, landings, stream crossings, wetland crossings, and stonewall crossings. Sub-watershed analysis of past and proposed harvest is also included.	F	Lot proposals	100%	The foresters prepared 19 new lot proposals, which included mapping, subwatershed analyses, and cultural resource protection measures.
8.	Layout, mark, tally and show timber sales in accordance with the approved lot proposals. Fill in permit conditions for the sale.	F	Permits Timber sales	100%	Seventeen forestry lots were sold. Forestry staff also supervised active harvest operations and maple sugaring permits.
9.	Prepare and file cutting plans in compliance with MGL Chapter 132 (Forest Cutting Practices Act) for each lot.	F	Approved cutting plans	100%	Seventeen cutting plans were completed and approved.
10.	Prepare and post informational flyers for each harvest detailing harvest area and management objectives.	F	Informational flyers onsite	100%	Seventeen informational flyers were written and posted.
11.	Present lot proposals at public meetings each spring and provide public tours of lot proposal areas and past harvests, as requested.	F	Public presentation and tours	100%	FY18 lots were all presented to the public at WRWAC and QWAC public meetings. Two public tours were held following the public meetings.
12.	Provide supervision and oversight of all timber harvesting operations on DWSP property to assure compliance with all applicable regulations, approved Best Management Practices/Conservation Management Practices and other contract conditions.	F	Supervision and oversight of all harvesting operations	100%	All timber harvest operations were supervised by forestry staff.
13.	Collect regeneration data on past harvest to help monitor effects of silvicultural operations on species composition and age structure. Create photo point for each lot and take pictures annually to help document forest response to harvest.	F	Regeneration database, maps, and photo documentation	50%	Photo documentation was completed, but regeneration data was not collected because new sampling methods were being tested and forest health data were being collected.
14.	Continue to implement a GIS based mapping system of silvicultural operations on the Quabbin and Ware Watersheds. Begin to use LIDAR	F	GIS datalayer of annual silvicultural operations	100%	GIS forestry datalayers were continually updated by foresters and sent to GIS coordinator.

<b>Task</b>	<b>Task Description</b>	<b>Lead</b>	<b>Product</b>	<b>Percent Complete</b>	<b>Comments</b>
15.	Continue the program of expanded water quality monitoring for harvesting operations. Conduct periodic stream sampling at long-term forestry sites. Modify plan, as needed.	EQ	Stream sampling; periodic evaluation	100%	Storm sampling was conducted four times at long-term monitoring sites. Began preliminary data analysis and evaluation.
16.	Collect data and maintain GIS datalayers, and related maps on forest structure, composition and regeneration, forest roads, boundary information, stone walls, wetlands and other data to guide the land management program.	F	Databases, maps	100%	GIS forestry datalayers were continually updated by foresters and sent to GIS coordinator.
17.	Maintain and mark reservation boundaries, as needed. Document and pursue resolutions of boundary encroachments.	F	Boundaries maintained; encroachments resolved	100%	Eighteen miles of reservation boundaries were maintained.
18.	Post on DCR website all lot proposals, lot summaries, public presentations, cutting plans, and some pictures of the lot as they change over time.	F	Lot Proposal Web postings	100%	DCR website was kept up to date.
19.	Implement the non-silvicultural land management portions of the Quabbin and Ware River Land Management Plans (e.g., field and viewshed maintenance; gravel pits management, etc.).	WM	Plan implementation	65%	Roads in both watersheds are mowed as equipment availability allows. Staff also performed land clearing at the new maintenance facility site.
20.	Supervise field mowing permits at Ware River to ensure permittees comply with permit conditions.	F	Field mowing in compliance with permit	100%	All field mowing permits were monitored, supervised, and complied with permit conditions.
21.	Administer and supervise maple sugaring permits on Quabbin Reservation.	F	Compliance with permits	100%	All maple sugaring permits on Quabbin Reservation were supervised and complied with permit conditions.
22.	Implement a Terrestrial Invasive Plant Management strategy, including monitoring, inventory and control components, especially in sensitive watershed areas.	NR	Strategy Implementation; Meetings with contractors.	100%	Field surveys and mapping of TIP populations are ongoing; draft site plans for TIP control in preparation. Rare plant populations were monitored and mechanical control was conducted in these areas.

Task	Task Description	Lead	Product	Percent Complete	Comments
23.	Provide administrative support for the Timber Harvesting including mailings, bid openings, financial management, database management, permit and key issuance, etc.	F	Program administration; annual revenue report; database maintenance	100%	Annual revenue reports were submitted on time, database maintained, and Forestry Program administration proceeded smoothly.
24.	If available, use UAS (unmanned aerial systems) to document forest conditions, map openings, identify invasive plant populations or other activities	NR	Updated forest data	0%	No activity because approval to use this tool is still pending.
25.	Design and implement a Pilot Vegetation Impact Protocol on DWSP lands in Quabbin to determine the impacts of invasives, herbivores and other factors on forest regeneration and growth	NR	Data, report	0%	DCR is still looking for a practical way to survey vegetation that will document browse pressure.
<b>D. Wildlife Management</b>					
1.	Observe and document the nocturnal roost of gulls on Quabbin Reservoir weekly during the months of September- March. If available, use an UAS to photograph/film the gull roost for later identification and counting.	NR	Data used to inform harassment program	100%	The Gull Program ended on March 29, 2017.
2.	Control Canada Geese populations on Quabbin reservation by treating eggs during nesting season to prevent hatching.	NR	Annual report	100%	Annual report completed for Quabbin reservation.
3.	Monitor area landfills for feeding gulls. Work cooperatively with landfill operators to ensure DEP landfill regulations are being followed.	NR	Field reports	100%	Monitoring continued of landfills, mall parking lots, and wastewater treatment plants for gull feeding activities.
4.	Monitor wastewater treatment plants in western and central Massachusetts that have wires installed to prevent feeding to make sure they are functioning and continue to exclude gulls. Identify plants without wires that attract gulls and work to install overhead wires.	NR	Controlled treatment plants	100%	Monitoring continued and exclusion wires are functioning to deter gulls from feeding in wastewater treatment tanks.
5.	Identify parking lots in western and central Massachusetts where food is available. Work to prevent feeding through educational signage, interaction and enforcement.	NR	Controlled parking lots	100%	Monitoring of parking lots continued to identify areas where gulls are being fed.

Task	Task Description	Lead	Product	Percent Complete	Comments
6.	Continue to identify alternative food sources for gulls in western and central Massachusetts; work to eliminate their presence.	NR	Food sources eliminated	100%	No new sources of food were detected.
7.	Remove beaver and muskrat in the Aquatic Wildlife Pathogen Control Zone at Quabbin, and assist with removal of nuisance individuals in other areas when possible. Utilize habitat modifications to discourage the presence of aquatic mammals.	NR	Field reports, annual summary	100%	Completed annual summary for Quabbin Reservoir.
8.	Analyze all aquatic mammals removed from the Pathogen Control Zone at Quabbin Reservoir for the presence of <i>Giardia</i> and <i>Cryptosporidium</i> by sending fecal samples to a laboratory for analysis.	NR	Summary reports	100%	Fecal pathogen samples were sent out for testing, and results were negative for <i>Giardia</i> and <i>Cryptosporidium</i> .
9.	Respond to beaver complaints from citizens affected by beaver on DCR property; provide assistance as time allows.	NR	Assistance to homeowners	N/A	No activity in Quabbin or Ware watersheds in FY17.
10.	Respond to beaver-caused flooding issues on DWSP property; assess situations and take appropriate actions.	NR	Field reports	100%	Culverts were monitored, and were also cleaned and maintained as needed. The beaver dam affecting a USGS gauging station was removed by hand after required permits were obtained.
11.	Respond to problems of burrowing animals on dams and dikes; report problems and take appropriate action	NR	Field reports	N/A	No problems reported.
12.	Continue long-term wildlife resource monitoring programs to document wildlife response to forest management.	NR	Database, Reports	100%	Conducted long-term monitoring on amphibians, breeding birds, bats and small mammals at sites scheduled to be harvested.
13.	Research and manage for common loons on DWSP waterbodies; provide nesting platforms, capture and sample birds for contaminants.	NR	Annual Report	100%	Loon research and monitoring continued, and annual report was completed. A lead sinker collection program was implemented collect old lead sinkers for recycling. Informational signs about this program and the fishing line recycling program were posted at fishing areas.

Task	Task Description	Lead	Product	Percent Complete	Comments
14.	Work with DFW to survey for and document breeding bald eagles on Quabbin Reservoir.	NR	Field Report	100%	Staff documented eleven active nests, of which seven produced a total of ten chicks.
15.	Administer the application, permit, orientation and components of the Quabbin Reservation White-tailed Deer Impact Management Program.	NR	Completed orientations and scouting	100%	Conducted three orientations and implemented the use of scanners for more efficient check-in/out during scouting and the hunt.
16.	Oversee and operate the annual controlled hunt.	RD	Completed hunt	100%	The controlled deer hunt was successfully run for the 26 <sup>th</sup> time on 12/1-12/2 and 12/8-12/9. Overall, there were 53 deer harvested from locations in Prescott, New Salem, Pelham and Petersham.
17.	Collect and analyze biological data and conduct an annual assessment of the Quabbin Reservation White-tailed Deer Impact Management Program.	NR	Biological data collection; Annual assessment and report	100%	Annual report completed.
18.	Monitor the status, and/or assess impacts, of selected wildlife species, including deer, beaver, migratory birds, water birds and vernal pool inhabitants. Coordinate with the Massachusetts Natural Heritage and Endangered Species Program concerning rare species occurrences and protection.	NR	Field Notes; reports	100%	Monitoring included acoustic surveys of bats, Whip-poor-will presence/absence survey, long-term monitoring of beaver on the Prescott Peninsula, and density estimates of deer/moose on watershed properties.
19.	Continue long-term monitoring and assessment of moose populations and impacts. Work with UMass researchers on the moose telemetry and exclosure studies on the Ware River and Quabbin watersheds.	NR	Project reports	100%	Staff produced a report summarizing the first 10 years (2006-2015) of moose sighting data collected during the Quabbin controlled deer hunts.
20.	Conduct pellet surveys on DWSP lands in Quabbin/Ware river to assess populations of deer and moose.	NR	Annual report	100%	Pellet surveys were conducted in New Salem and Hardwick, which completed the survey of the entire Quabbin Reservation.

Task	Task Description	Lead	Product	Percent Complete	Comments
<b>E. Public Access Management</b>					
1.	Proactively patrol watershed lands to ensure compliance with DCR regulations and Policies. Tally visitor contact and produce quarterly and annual summary reports. Conduct trend analyses on data collected (e.g., rule violations, access permits, encounters, etc.)	WR	Reports	100%	Visitor contacts: 18,926 Violations: 437 Permit monitors: 14 Access permits were recorded and documented.
2.	Continue to cooperate with state, environmental, and local police for help with enforcement when required.	WR	Enforcement Resolution	100%	Weekly summaries were submitted to Massachusetts State Police.
3.	Use Agency social media accounts for advertisement of interpretive programs, including general info or emergency info (such as closings).	WR	Press documents	100%	Coordination with Boston office for postings on the internet, twitter, and other social media.
4.	Continue updates and improvements to access points with signs, gates and improved parking areas. Conduct regular inspections of gates and access barriers.	WR	Signs, barriers	75%	An inventory of watershed gates, including location, condition, signage, size, and photos, is nearly complete. WR performed daily patrols and checks of gates and access points.
5.	Continue to implement Quabbin and Ware Public Access Management Plan policies, as necessary	WR	Compliance with DWSP regulations	100%	Regular patrols in Quabbin and Ware River watersheds
6.	Continue to conduct “special operations” such as night operations, ATV, and snowmobile operations, as needed.	WR	Compliance with DWSP regulations	100%	Ongoing.
7.	Enforce Rules and Regulations of 313 CMR 11.09 through the use of citations. Issue written warnings and/or non-criminal citations for repeat offenders and serious violations.	WR	Compliance with DWSP regulations. Update database.	100%	Violations included two written warnings, nine non-criminal citations, and one lifetime revocation of fishing privileges.
8.	Develop, install, and maintain appropriate signage throughout the watersheds, including trail signs and signs indicating access restrictions. Create watershed boundary signs for popular access points at Ware River watershed. Evaluate feasibility of adding new signage along major roadways entering watersheds.	IS	Signs produced and posted, as needed	100%	Signage developed as needed. No work on watershed boundary signage.

Task	Task Description	Lead	Product	Percent Complete	Comments
9.	Operate the shoreline and boat fishing program in designated portions of Quabbin Reservoir in a manner that minimizes threats to water quality and that accommodates visitors with accessibility needs. Implement the Quabbin Boat Seal program (QBS) at the 3 BLAs.	WM	6 months of program operation	100%	The shoreline and boat fishing program operated for 182 days during FY17.
10.	Continue to record, analyze and report on data about the BLA operation, including revenues and usage figures.	ATS	Annual report and analysis of BLA usage, QBS and revenues.	100%	BLA operation data, revenue and usage was maintained daily. 2016 annual report was produced in December 2016.
11.	Develop and distribute materials to inform visitors of access rules, policies, and general watershed protection information. Update and maintain kiosks and bulletin boards with appropriate visitor information. Construct new kiosks at locations identified in the Quabbin Park Management Plan and at the new Mass Central Rail Trail bridge near Shaft 8.	IS	Fact sheets, brochures; kiosk maintenance; new kiosks	100%	Materials were produced and distributed through the Visitor Center and other programs. Kiosks were maintained throughout the watershed.
12.	Analyze and mitigate water quality impacts of recreation or other public access activities through regular watershed inspections.	EQ	Field reports; assessments	100%	Most of this work is performed as part of EQAs.
13.	Operate a portable toilet program based on BLA, Deer hunt and seasonal needs.	WM	Installation of portable toilets (ADA-compliant)	100%	Portable toilet program was operated financially efficiently and operationally effectively for special program needs and seasonal uses.
14.	Provide ongoing support and consultation to DCR's Division of State Parks and Recreation and the Office of Fishing and Boating Access regarding Comet Pond beach and boat ramp operation and management.	WM	Support and consultation	100%	Staff provide support and maintain the boat launch.
15.	Coordinate and/or support special programs and events, including Memorial Day services, public meetings, Special Olympics, paraplegic hunts, and Tuesday Tea events.	IS	Public events	100%	All special programs were successfully implemented.
16.	Continue to implement Universal Accessibility projects throughout the Quabbin/Ware Region.	WM	Enhanced accessibility	100%	New Universal Access project started planning stages for a Universal Canoe/Fishing program at BLA 3.



Task	Task Description	Lead	Product	Percent Complete	Comments
17.	Collaborate, educate, and monitor issues around the Mass Central Rail Trail (Wachusett Greenways organization).	F		100%	Staff collaborate, educate, and monitor issues in this area. In addition, they supervised an SCA crew working on access issues around the Mass Central Rail Trail.
18.	Continue to control and monitor research and other public access through an internal review process and permit system. Maintain electronic databases for permit issuances, access notification, and any problems.	IS, WR	Permits issued; databases maintained; policy changes, if needed	100%	IS issued 398 access permits, and WR monitored this access.
19.	Update Quabbin Public Access Management Plan by the end of 2016	EP	Updated plan	100%	Draft plan was completed but still under review by other agencies at the end of FY17. Release for public comment planned for fall of 2017.
<b>F. Watershed Security</b>					
1.	Continue regular Ranger patrols to provide watershed security. Provide regular security checks at key access points and MWRA facilities. Use daily logbooks to record all encounters and violations. Produce periodic reports. Provide weekly incident summary email to MWRA.	WR	Daily patrols; daily logbooks and incident report	100%	Daily field logs were submitted, and Incident Reports were filed as needed.
2.	Enhance the enforcement of public access regulations through partnership with the EPA, DEP, State Police, Environmental Police and local police departments.	WR	Enhanced enforcement; partnerships	100%	Weekly enforcement reports compiled for review. Annual reports submitted to DEP and MWRA as required. All enforcement actions are documented and reported to sister agencies as needed.
3.	Inspect, maintain, and monitor gates, barways, and signage throughout the watersheds for security and access control. Install barriers (guardrails, fences) as needed to protect properties and control public access.	WR	Inspection; repairs; installation	100%	All security access points were surveyed and inventoried by Ranger staff. New barriers were installed in three locations.
4.	Coordinate security monitoring and related activities at high vulnerability locations with MWRA.	RD	Enhanced security	100%	Security monitor work in conjunction with MWRA completed as requested.

Task	Task Description	Lead	Product	Percent Complete	Comments
5.	Coordinate with MWRA and consultants on efforts to provide power, security and communication upgrades to the Shaft 12, Quabbin Tower, CVA Intake, Powerhouse and Boat Cove facilities. Provide assistance with site surveys and all land clearing, disturbance and environmental permitting efforts.	RD	Support and consultation	98%	CE helped coordinate logistics and operations for this project. Work included the installation of over four miles of overhead cabling and poles, more than a half mile of underground conduit, as well as security enhancements such as remote monitoring capabilities, additional lighting, and alarm systems.
<b>G. Infrastructure</b>					
1.	Conduct monthly inspections and issue findings on Winsor Dam and spillway and Goodnough Dike. Implement basic maintenance activities as needed. Coordinate with MWRA and consultants on inspections.	CE	Monthly reports filed and sent to MWRA Western Operations.	75%	Staff performed and reported on most monthly dam inspections and piezometer monitoring results, but capacity issues limited this work to nine out of twelve months.
2.	Conduct periodic inspections and issue findings on DCR's bridges and small dams in the Quabbin/Ware Region. Assure compliance with all dam safety requirements for small dams on DWSP lands, including the preparation or updating of Emergency Action Plans. Coordinate with consultants on inspections.	CE	Inspection reports	75%	Dams in the Ware River watershed were monitored, maintained, and inspected by DWSP staff. Two dam compliance inspections were completed, and the third was postponed to fall, 2017 due to limited staff time.
3.	Plan for or conduct dam repair work as called for in dam inspection reports. Implement basic maintenance activities as needed.	CE	Dam repair and maintenance	100%	Staff performed routine maintenance on dams, including regular mowing, animal burrowing controls, and ditch cleaning.
4.	Evaluate the feasibility of removing unsafe or unnecessary small dams in the Ware River watershed including environmental assessment and ecological impact assessment.	CE	Assessment reports; dam removals	N/A	No activity on this task.
5.	Participate in quarterly Reservoir Operations meetings with MWRA.	RD, ARD	Staff participation	100%	RD and ARD participated in quarterly Reservoir Operations meeting with MWRA staff.



Task	Task Description	Lead	Product	Percent Complete	Comments
9.	Conduct periodic inspections of drinking water sources and septic systems at the various Regional office buildings. Assure compliance with applicable state and federal regulations.	CE	Meeting DEP requirements; Monthly and annual reports	100%	EQ staff conducted regular sampling and reporting to maintain PWS compliance. Staff also performed water quality monitoring at field offices not subject to PWS requirements. CE staff oversaw a contract to perform a diver-assisted tank cleaning and inspection of the Administration building water tank. The contractor also monitored approximately one year of building waste water flows and made repairs to a leaking, buried gate valve. CE staff also designed and permitted plans to construct a shared septic system to serve the Stockroom building and future Quabbin Maintenance Building.
10.	Conduct periodic inspections, maintenance, or oversight of heating systems, fuel pump operations, and fuel deliveries.	CE	Inspections; oversight.	100%	The Quabbin wood boiler system operated for 77 days and burned approximately 150 tons of chips. The system also burned approximately 18,000 gallons of oil, but overall fuel costs were below average due in part to low oil prices. CE staff oversaw the replacement of oil storage tanks at the Ware River Field Office and the Ranger Station.

Task	Task Description	Lead	Product	Percent Complete	Comments
11.	Provide surveying and drafting services, maintain records, and respond to in-house and other requests for information related to land ownership, property lines, buildings, and construction projects.	CE	Plans, records	100%	Staff oversaw a surveying contract to clarify, record, and establish property bounds for four recently-acquired parcels.
				50%	Staff also surveyed and completed preliminary site plans for future roadway culvert repairs that will be needed on the entrance road to Dana Common.
12.	Develop specifications, bid packages and contracts for facility and infrastructure projects scheduled for FY17	CE	Specs, bid packages, contracts	100%	Staff oversaw a contract to develop plans for the restoration and repair of the bridge at BLA 3. Preliminary estimates for repairs were approximately \$400,000. This work is tentatively planned for fall, 2018.
				50%	Staff are overseeing a contract to conduct a survey of asbestos-containing materials within the Administration building and to update the facility O&M Plan.
13.	Conduct maintenance and management activities in Quabbin Park, including roads, roadsides, parking areas, drainage structures, fields, vistas, and other management activities.	WM	Maintenance and management of Quabbin Park	40%	A contractor completed crack sealing over approximately five miles of road in the Park. Maintenance work by DWSP staff included clearing roadside brush, cleaning drains, and fixing potholes. Limited equipment and staff caused this task to be incomplete.
14.	Continue to conduct routine operational and maintenance activities in the Quabbin Park cemetery, coordinate with local funeral homes and other entities for burials, and provide administrative support services.	WM	Cemetery maintenance; burials; record keeping	100%	Cemetery maintenance included stripping and repainting the flagpoles and the cannon. Staff assisted with eleven burials during FY17.

Task	Task Description	Lead	Product	Percent Complete	Comments
15.	Conduct Quabbin Park Cemetery business and record keeping.	ATS	Correspondence , Accurate record keeping, etc.	100%	Quabbin Park Cemetery business proceeded smoothly. Cemetery records are under review for archiving efforts in FY18.
16.	Conduct maintenance activities on OWM roads, including grading, culvert and ditch maintenance, mowing sides of forest roads, and snowplowing. Continue to collect data on road conditions, culvert locations, etc. Continue to use BMPs in all road maintenance activities.	WM	Road maintenance	90%	Approximately five to six miles of road were scraped, graded, and partially graveled. Improvements to drainage and ditching were also performed in some areas.
17.	Coordinate with MWRA and consultants on efforts to plan and contract for major renovations to occur on the Quabbin Administrative Building Complex	CE	Renovated Quabbin Administrative Building Complex	100%	Staff presented a draft scope of work for the Administration building renovation project to MWRA project engineers.
18.	Complete individual Gravel Management Plans for gravel pits (as needed) on DCR lands in the Quabbin/Ware Region. Annually review and monitor gravel extraction by towns. (Task was modified to conduct inventories of gravel pits in Quabbin Reservoir Watershed in FY16 and Ware River Watershed for FY17.)	EQ	Individual management plans	100%	Completed Ware River Watershed gravel pit inventory. Staff also monitored extraction by towns, and responded to gravel pit issues.
<b>H. Watershed Protection Act</b>					
1.	Implement the Watershed Protection Act regulations. Review all WsPA applications, respond in a timely manner, hold official hearings, and track the status of applications and associated projects using a database and GIS data layers. Inspect sites with conditional approval throughout the duration of any activity to ensure compliance. Prosecute violations of the WsPA regulations, as needed. Work with DCR General Counsel on WsPA cases, as appropriate.	EP	Application processing; decision issuance; field work	100%	In FY17 there were a total of 24 WsPA cases; these included 18 advisory rulings, four determinations, and two variances.

Task	Task Description	Lead	Product	Percent Complete	Comments
2.	Continue to review or evaluate public notices and local board agendas and minutes for additional jurisdictional activities.	EP	Local notice review	75%	Monitored MassDEP cases in the central region. Followed up on abutters notices sent to DWSP (re: development projects). Maintained contacts with some watershed town building inspectors and other local land use boards. Received input from the public related to concerns about development projects. Conducted field work, including general patrolling of the watershed.
3.	Attend the quarterly Watershed Protection Act Working Group meetings.	EP	Meeting attendance	100%	WsPAWG met three times this fiscal year: 10/27/16, 1/27/17, and 6/26/17.
4.	Maintain a database on WsPA cases and activity.	EP	Database maintenance	100%	Ongoing.
5.	Update existing, or develop new, WsPA related materials, as needed, such as forms, brochures, and guidance document.	P	Brochures, forms, other documents	100%	Worked with General Counsel on updates of Watershed Protection Regulations. Major change was switching prefix to 313 in order to align with other DCR regulations; minor changes made that reflect past 20 years of WsPA implementation. Public hearings held on September 13, 15, 20, and 22. One set of comments received. The revision to the Watershed Regulations were completed and promulgated as 313 CMR 11.00 on 2/24/17. Information on the regulatory update, including a fact sheet describing the changes, were posted on the WsPA web page. Updated information, including maps and lists of affected parcels, will be distributed to watershed communities.

Task	Task Description	Lead	Product	Percent Complete	Comments
6.	Educate and interact with local boards in the watersheds about watershed protection regulations. Ensure that local officials have an adequate supply of the current WsPA forms and wall maps, and understand the procedures for referring applicants to the DWSP. Educate realtors, prospective buyers, and local homeowners on WsPA affected lands and agricultural activities (e.g., horse property buyers).	EP	Education of local boards, homeowners, etc.	100%	Ongoing communication.
7.	In cooperation with other sections in Region provide technical assistance to Watershed Town that promotes public health and water quality.	EP	Drafting of bylaws and regulations; local development project review. Adopted community bylaws	100%	Plan reviews as needed.
<b>I. Interpretive Services</b>					
1.	Implement the Interpretive Services Plan for the Quabbin Watershed. Develop a similar plan for the Ware River watershed	IS	Plan implementation or development	100%	IS staff continue to implement the Interpretive Plan.
2.	Staff and operate the Visitor Center at Quabbin to educate visitors about watershed management and related topics. Coordinate with visiting groups to provide orientation at the Visitor Center and in Quabbin Park. Maintain records on Visitor Center activities.	IS	Visitor center operation	100%	The Quabbin Visitor Center was staffed and operated for 358 days for the year with 17,778 visitors and 6,780 phone calls answered.
3.	Continue established programs of public education, including school programs and field trips on DWSP properties. Expand outreach efforts in Quabbin Park. Expand the Quabbin Reservoir watershed curriculum using materials developed by MWRA, DEP, EPA, Project WILD, Project Learning Tree, Project WET, and other appropriate watershed resources. Continue to support watershed school system teachers through in-service workshops and day-long offerings for school groups.	IS	Curriculum; education materials and services	100%	Staff provided 82 school programs for 3,772 students.



Task	Task Description	Lead	Product	Percent Complete	Comments
4.	Collaborate with other organizations and watershed communities to reach more diverse audiences. Identify specific groups and their educational needs.	IS	Programs; public contacts	100%	Joint programs held where appropriate.
5.	Develop watershed exhibits and portable displays for use in talks and presentations, both in the Quabbin Visitor Center and in watershed communities.	IS	Exhibits and displays	100%	Ongoing display development.
6.	Develop and maintain self-guided interpretive trails focusing on natural resource management and water quality protection; include interpretive signs with information related to watershed protection programs, forest succession, history of the reservoir, wildlife. Utilize outside sources of assistance (e.g., Student Conservation Association) for trail maintenance.	IS	Trail improvement; signage; brochures	100%	Interpretive trail at Quabbin maintained.
7.	Maintain and expand the Quabbin Resource Center with materials and educational information on the watershed system, water quality, history and development of the watershed and water supply system, water pollution, and water supply protection and management.	IS	Resource materials	100%	Resource Center information updated.
8.	Offer educational programs to visiting groups. Arrange for staff members with particular expertise in a variety of environmental, water resource, wildlife and watershed protection issues to speak, when appropriate, to outside groups and organizations.	IS	Speakers; educational programs	100%	Staff offered 38 public programs for 959 participants.
9.	Continue to gather data, produce and distribute publications and fact sheets on selected topics relative to watershed protection. Update displays at kiosks and bulletin and include maps that clearly show areas for bicycling, hunting, and fishing. Target educational efforts at non-permitted groups.	IS	Data collection; fact sheets; Downstream newsletter; other publications	100%	Ongoing.
10.	Improve the educational signage regarding drinking water protection in the Quabbin Visitor Center and in Quabbin Park.	IS	New signs	100%	Ongoing.
11.	Provide graphics support to Division staff to increase quality and effectiveness of publications, brochures, and public documents.	IS	Brochures, reports, presentations	100%	Ongoing, as needed.

Task	Task Description	Lead	Product	Percent Complete	Comments
12.	Contribute to update OWM website with information related to all aspects of watershed protection program.	P	Website updates	100%	Updated as needed. Worked with DCR and MassIT on transition to new web design.
13.	Continue to support and participate in the Envirothon, America's leading natural resource education program for high school students.	IS	Participation	100%	DCR staff continue to support the Envirothon throughout the year.
<b>J. Water Quality and Water Quantity Monitoring</b>					
1.	Provide environmental oversight for all Regional activities to minimize adverse water quality impacts. Conduct pre-project reviews of all projects and activities within 100' wetland buffers.	EQ	Field reports; Annual inspection	100%	Staff provided oversight and conducted water quality sampling when appropriate.
2.	Review DEP annual requirements for the CVA waiver.	EQ	Reports to DEP as requested.	100%	Submitted required reports; prepared for and attended MassDEP inspection.
3.	Continue routine and non-routine water quality sampling and analysis (including algae and nutrients) in order to track water quality parameters and trends in the reservoir and tributaries. Continue analyses for nutrients and calcium on selected tributaries. Review water quality data and prepare annual report summarizing changes over time. Modify sampling plan as needed.	EQ	Weekly reports; Annual reports; Annual sample collection plans.	100%	Routine sampling and analyses were performed on Quabbin Reservoir and watershed tributaries. Non-routine samples were collected and analyzed as needed to further assess water quality. Completed 2016 Water Quality Report and posted on DCR website.
4.	Perform Shaft 8 Intake Zone Inspection prior to Diversions.	EQ	Ongoing	100%	Conducted inspections when notified by MWRA of impending diversions.
5.	Monitor plankton in Quabbin Reservoir and selected tributaries.	EQ	Data collection; periodic reports	100%	Plankton was monitored monthly or bimonthly, depending on the season.
6.	Continue program to monitor AIS in tributaries and other water bodies. Review and update the AIS monitoring and emergency AIS action plan.	EQ	Reports, Update AIS plan	100%	Monitoring was conducted, and macrophyte surveys and reports completed for 2016 season.

Task	Task Description	Lead	Product	Percent Complete	Comments
7.	Continue the active harassment of gulls and geese within the Pathogen Control Zone at Quabbin Reservoir, using human presence, boats, pyrotechnics, passive scare devices, and other techniques. Continue to identify and test new harassment techniques. Operate the gull harassment program to meet DEP/EPA filtration waiver requirements.	EQ	Daily and annual reports; database entries; weekly reports to MWRA	100%	Active harassment was performed from October, 2016 through March, 2017, and annual report was submitted to MassDEP. Staff held a training and improved procedures for safe operations, and also monitored the new water circulator in the Boat Cove for de-icing.
8.	Collect, interpret, and manage data on weather, reservoir elevations, water transfers and releases, and runoff. Share data with DWSP staff and MWRA.	CE	Data collection and yield reports;	100%	Reservoir yield and weather conditions were monitored daily. Summary reports were produced and distributed on a monthly and annual basis.
9.	Participate in Water Quality Sampling and Analysis Coordination Team (WQ-SAT) meetings. Review and evaluate the DWSP's routine water quality monitoring schedule and make appropriate modifications.	EQ	Updated sample collection schedule	100%	Attended meetings, reviewed and submitted sampling plan annually, and coordinated changes as needed.
10.	Coordinate water sample analysis and data sharing with MWRA and the Quabbin Water Quality Lab.	EQ	Coordination	100%	Continued coordination with MWRA laboratory and operations staff.
11.	Keep abreast of emerging contaminants and other potential water quality threats. Investigate further when necessary.	EQ	Update information	100%	Staff attended a symposium on cyanobacteria and emerging contaminants.
12.	Conduct short-term water sampling of forest harvesting operations on DWSP lands.	EQ	Inspections and sample collections; database updates.	100%	Staff collected baseline, harvest, and post-harvest water quality samples.
13.	Continue monthly sediment and nutrient sampling, to monitor the effects of both natural and deliberate disturbances on water quantity and quality in first-order streams.	NR	Data collection	100%	Samples were collected from long-term forestry monitoring sites on a monthly basis.

Task	Task Description	Lead	Product	Percent Complete	Comments
<b>K. Watershed Monitoring and Surveillance</b>					
1.	Use site inspections, environmental quality assessments, local board meetings, and information from Watershed Rangers to identify and mitigate possible violations of state and federal regulations. Monitor progress and pursue enforcement if needed.	EQ	Regulation enforcement	100%	Staff regularly attend local board meetings and conduct site assessments. In FY17, several possible violations were investigated and followed up on as needed.
2.	Conduct routine inspections of the Winsor basin/CVA intake area. Inspect MWRA CVA screen washing when necessary. Report debris and aquatic organisms trapped on screens.	EQ	Routine inspection summaries; database entries	100%	EQ staff conducted 42 CVA inspections and entered results into the database.
3.	Coordinate with other agencies to exchange information and review of projects in watershed. Check MEPA's <i>Environmental Monitor</i> each month and review, investigate and/or comment on projects when applicable.	EQ	Project reviews and written comments	100%	Reviewed projects in watersheds and submitted comments as appropriate.
4.	Monitor MassDEP databases regularly for new 21e information.	EQ	Hazardous waste database; EQA inspections and reports.	100%	Reviewed as part of EQAs.
5.	Review periodic reports on closed landfills in the watersheds. Coordinate with town and/or DEP to review monitoring reports.	EQ	Reports	100%	Reviewed as part of EQAs.
6.	Review and comment on Yearly Operational Plans related to herbicide use. Monitor and inspect no-spray and limited spray zones along Rights-of-Way.	EQ	Letter to DAR; brief field reports	100%	Submitted comments on National Grid YOP and Providence & Worcester railroad YOP.
7.	Work with loggers and Rights-of-Way contractors to reduce the risk of introducing invasives into the watersheds.	EQ, F	Meetings with contractors, DCR permit language to prevent invasives	100%	All timber harvesting equipment was inspected by forestry staff before being moved onto DWSP lands.
8.	Monitor utility maintenance, repair, or replacement projects on DCR lands for water quality problems.	EQ	Meetings with contractors; permits; SOPs	100%	Monitored National Grid YOP work.

Task	Task Description	Lead	Product	Percent Complete	Comments
9.	Continue to identify, map, and monitor locations of agricultural operations that could impact water quality through the EQA process.	EQ	Maps; reports	100%	Monitored as part of EQA fieldwork.
<b>L. Aquatic Invasive Species</b>					
1.	Conduct education about Aquatic Invasive Species	EQ	Education	100%	Staff conducted education during Boat Decontamination and Cold Weather Quarantine, as well as through presentations at the Visitor Center and local organizations.
2.	Continue the Quabbin Boat Seal program to minimize the risk of AIS infestation of Quabbin Reservoir. Conduct Cold Weather Decontamination Program. Conduct Boat Inspection Program.	EQ	Boat Seal tracking, inspections, decontamination, public education.	100%	Boat seal program continued at three BLAs. Cold Weather Quarantine and Inspection programs were also performed.
3.	Update and maintain a boat seal database.	EQ	Database entries; annual report	100%	Database completed for 2016 season. Program improvements, such as the feasibility of data entry automation, are being researched.
4.	Evaluate and implement options for minimizing risk of AIS infestation throughout the Quabbin and Ware River watersheds.	EQ	Control programs; Public education	100%	Boater self-certification programs at Comet and Long Ponds continued. Staff also provided a letter of support for AIS removal at Hardwick Pond, located approximately 2.5 miles from Quabbin Reservoir.
5.	Implement a program of detection, monitoring and control of invasive aquatic species and other macrophytes in the Quabbin and Ware River watersheds, including education and training of Boat Launch Area attendants and other appropriate staff. Work in conjunction with the DCR Lakes and Ponds, MWRA and MWRA contractors. Evaluate and make changes in program as needed.	EQ	Monitoring program; training	100%	Staff worked with DCR Lakes and Ponds to implement AIS removal from Whitehall Pond. Other projects included inspecting and maintaining the fragment barriers at BLA 2 and BLA 3, as well as inspecting gear and equipment prior to use in the reservoir.

Task	Task Description	Lead	Product	Percent Complete	Comments
<b>M. Environmental Quality Assessments</b>					
1.	Complete Environmental Quality Assessments in the Quabbin Reservoir and Ware River watersheds according to a prescribed schedule. Include AIS surveys of lakes, ponds and tributaries in EQAs.	EQ	EQA reports	100%	EQA reports on the East Branch Swift River and East Branch Ware River EQA, including AIS survey results, were completed.
2.	Implement recommendations in completed EQAs and oversee, as necessary, short and long term remedial actions.	EQ	Annual Status of Recommendations report	100%	Began or continued implementation.
3.	Update and assess land use/land cover statistics for watershed, sanitary districts, and sub-districts when new GIS coverages are available.	ATS	Updated coverages and analyses	100%	Coverages were updated as needed.
4.	Continue to incorporate wildlife observations (that could affect water quality) into EQA field work.	EQ	Report information to NR	100%	Observations are routinely reported to NR.
<b>N. Wastewater Management</b>					
1.	Identify potential problem sites or areas through review of local records, water quality data, and other pertinent information.	EQ	EQ file reports; new database	100%	Ongoing. Staff worked with MassDEP to clarify applicability of Title 5 requirements within 200 feet of a Zone A pond.
2.	Monitor and enforce the provisions of Title 5 with Boards of Health and the DEP. Maintain a good working relationship with all local Boards of Health and provide technical assistance, when requested, on wastewater management issues. Monitor septic system research.	EQ	EQ file reports	70%	Not routinely monitored, because oversight through Title 5 is generally sufficient. No water quality issues were identified from septic systems.
<b>O. Stormwater Management</b>					
1.	Coordinate with DEP on compliance with NPDES CGP regulations in watershed communities. Review applicable stormwater permitting applications (e.g., SWPPP). Advise local boards on stormwater management issues related to construction activities.	EQ	Reviewed applications; Advice as needed; brief annual report.	100%	No NPDES applications submitted. Advised local boards as appropriate.

Task	Task Description	Lead	Product	Percent Complete	Comments
2.	Design and implement stormwater BMPs around the reservoir to address erosion and sedimentation due to public access, stormwater runoff, and shoreline erosion. Construct stormwater BMPs on DWSP property in accordance with set priorities. Integrate stormwater management controls into DWSP road paving projects.	CE	File reports; BMP construction and maintenance	100%	Staff developed and implemented plans for erosion and sediment controls for the BLA 2 roadway improvements.
3.	Work with state and local highway to improve stormwater infrastructure in areas where reconstruction is proposed. Improve operation and maintenance practices near the Shaft 8 Intake, Quabbin Reservoir and its tributaries.	EQ	Field reports	100%	Inspected and commented on one project in Quabbin Reservoir watershed and two projects in Ware River watershed.
4.	Continue to collect data on and update maps on culverts and other stormwater conveyance structures in the Quabbin and Ware River watersheds.	CE	Database and maps	50%	Work completed as staff time allowed.
<b>P. Emergency Response</b>					
1.	Continue to develop and/or update <i>Emergency Response Handbooks</i> for the Quabbin and Ware River watersheds, with up-to-date contact information, emergency procedures and roles/responsibilities.	ATS	Emergency Response Handbook; Contact Lists	100%	Emergency Contact Instructions and Lists were updated and distributed to staff, DCR management, MWRA management, MSSP and MEMA State Control.
2.	Formalize SOPs for spill cleanups and define DCR staff roles in both assessment and cleanup. Work with MWRA to maintain emergency response trailers and/or other spill response supplies and equipment.	EQ	Updated SOPs; Equipment procurement.	100%	The emergency response trailer repair project was completed. Began longer-term planning for supply and storage needs.
3.	In conjunction with MWRA, provide spill response and/or incident command system (ICS) training to staff, local emergency officials, loggers, and others.	EQ	Training of staff and local officials	100%	Planned and coordinated spill response trainings for staff and local officials.
4.	Conduct or assist with cleanup operations for any spills that impact or threaten water resources or DWSP property. Work with the appropriate local, state and federal agencies to ensure that the containment, cleanup and mitigation of the spill proceeds in a manner that protects water quality.	EQ	Emergency response; incident reports	100%	Conducted environmental survey of emergency plane landing on sandbar in Quabbin Reservoir, and documented response activities. Improved spill reporting procedures to ensure faster cleanup.

Task	Task Description	Lead	Product	Percent Complete	Comments
5.	Follow all responses to an accidental or dumping release of hazardous materials with a coordinated monitoring and/or evaluation effort in cooperation with MassDEP and local officials to ensure that appropriate cleanup and assessment protocols are followed.	EQ	File reports	100%	Staff maintained coordination with MassDEP staff and local officials.
6.	Develop and implement Spill Response Plans for all Timber Harvesting operations on DWSP lands.	F	Spill Response Plans	100%	Spill response plans were developed by all foresters and submitted to Spill Response coordinator.
7.	Coordinate with State Control, MWRA, MSP, during emergency response situations.	ARD RD	Coordination	100%	RD and ARD share weekend 24/7 on call duty with State Control, MWRA, and MSP.
<b>Q. Support</b>					
1.	Operate administrative offices, including answering phones, greeting visitors, etc.	ATS	Main office operation	100%	All office duties completed.
2.	Provide payroll and personnel benefits support for all Regional employees.	ATS	Payroll reports; Support	100%	All payroll and benefit support duties were completed.
3.	Provide contract administration, financial management, record-keeping, purchasing of goods and services, and other financial support services.	ATS	Accounting and financial services	100%	Contract administration, financial management, record-keeping , purchasing completed on time, as needed.
4.	Coordinate with EOEEA IT to provide local MIS support for the Quabbin/Ware Region. Develop an IT Plan with input from Regional staff that addresses technology needs for the coming year.	GIS, ATS	Support and troubleshooting services; IT Plan	100%	IT plan under development for FY18 submittal.
5.	Provide overall planning, administrative and supervisory oversight for all Regional activities and programs, including office operations, policy and plan development and implementation, staff assignments, hiring, and other personnel issues.	RD	Ongoing management, support and oversight	100%	Management completed by Acting Interim Regional Director from January-June.
6.	Provide orientation for new staff and integrate them into existing operations	ATS	Training and orientation	100%	All new staff attended orientation training with HR in Boston and new on-boarding checklists performed by supervisors.



Task	Task Description	Lead	Product	Percent Complete	Comments
7.	Participate in staff meetings, discussions and other activities related to the operation of the Region.	All super- visory staff	Participation	100%	Bimonthly senior staff meetings, monthly supervisor and workplace safety meetings conducted.
8.	Prepare and submit to Division Director, MWRA and the Water Supply Protection Trust Board Annual Work Plans, budgets, quarterly progress reports and program goals and objectives; track progress in meeting program goals.	RD	Completed plans, budgets and reports	100%	All plans submitted as needed. All budgets submitted as needed.
9.	Attend meetings and coordinate Regional activities, with the Division Director, Wachusett/Sudbury Region, MWRA, DEP, watershed advisory committees, watershed communities, EOEEA, research organizations, academic institutions, and other agencies and groups.	RD	Coordination; correspondence and communication	100%	Ongoing.
10.	Continue to evaluate current Regional operations from a sustainability and energy efficiency standpoint and implement appropriate measures to improve those operations. Evaluate and, if appropriate, implement the energy efficiency recommendations from the DCAMM audit of the Ware River field office.	CE	New initiatives; reports	100%	Energy audits were completed at the New Salem Field office, and audit recommendations for improved lighting and energy conservation measures were installed at the Ware River Field Office.
11.	Provide GIS and GPS services and associated mapping for all Regional plans, reports and projects, as needed. Keep GIS datalayers updated as new information becomes available.	ATS	Maps; datalayer updates; other services	100%	Maps provided for Quabbin Public Access Plans update, LMP final drafts, all Forestry proposals, and EQAs.
12.	Update digital information, including all new OWM land purchases, Watershed Protection Act maps and parcels, and provide analyses for use in OWM reports and publications.	GIS	Updated maps for all Quabbin communities	100%	Back-filled GIS position after retirement of long-time staff allowed ongoing work to continue.
13.	Plan and implement vehicle and equipment purchases.	ARD	Vehicle purchases; up-to-date records	100%	FY17 Vehicle and heavy equipment purchased successfully completed. Draft FY18 vehicle and heavy equipment needs list completed.
14.	Maintain up-to-date records of all vehicles and equipment (in FAMIS and file system).	WM	Updated records	100%	Excel data moving to Fleetwave; training completed to achieve this goal.

<b>Task</b>	<b>Task Description</b>	<b>Lead</b>	<b>Product</b>	<b>Percent Complete</b>	<b>Comments</b>
15.	Conduct truck, boat, and equipment inspections and maintenance as needed, utilizing the Facility Asset Management Information System (FAMIS).	WM	Vehicle and equipment maintenance and repair	100%	All inspections needed were conducted. FAMIS records kept up to date.
16.	Maintain vital records collection for former Quabbin valley towns, issue official records and conduct genealogical and historical research upon request. Manage audio-visual collection of the Region including photographs, slides, oral history tapes and media coverage of Regional activities and Quabbin related topics.	IS	Record management	100%	Staff processed: 121 genealogical record requests; 56 historical photograph requests; and 22 vital record requests.
17.	Administer the Payment in Lieu of Taxes (PILOT) program	P	Payments to watershed communities	100%	FY2017 Payment in Lieu of Taxes totaled \$8,190,986, an increase of 0.8% from FY2016. PILOT to Quabbin and Ware communities was \$3,890,818. Staff reviewed information from DOR on the 2017 revaluation of State Owned Lands. Analysis provided to DCR management and MWRA.
18.	Attend appropriate trainings, workshops and other professional development offerings, with priority on safety training; maintain licensure.	All Work Units	Training	100%	DWSP staff attended safety trainings and meetings as well as trainings to maintain licensures.
19.	Maintain professional involvement through continued participation in professional organizations, task forces, working groups, conferences and other appropriate opportunities.	All Work Units	Participation and input; professional involvement	100%	Staff attended conferences and are active members of various professional organizations.
20.	Continue to network with other water supply agencies to share watershed management information.	EQ	Information sharing	10%	Limited time to pursue this task.
21.	Develop a Long Range Capital Plan, in conjunction with MWRA.	RD	Long-range plan	100%	Focus on Quabbin Admin renovations

**Watershed Ranger Activity, Wachusett/Sudbury Region  
FY2017**

**Visitor Contacts: 16,337**

**Violations: 788**

<b>313 CMR 11.09</b>	<b>CMR</b>	<b># of Violations</b>	<b>Written Warning</b>	<b>Citation</b>
<b>Wachusett</b>				
<b>2a1</b>	Entrance/Exit only through gates or designated areas.	4	0	0
<b>2a2</b>	Allowed on Watershed land 1 hour before sunrise to 1 hour after sunset	103	2	1
<b>2a3</b>	No powered boats except in designated areas.	0	0	0
<b>2a4</b>	No acts which may pollute the water system. No litter thrown or left.	7	0	2
<b>2a5</b>	All acts injuring the property are prohibited. No person shall injure, deface, destroy remove or carry off any property, including historic artifacts and natural materials. No removal of gravel, topsoil, stones, boulders or other material. No building or constructing any object or structure on property.	2	0	0
<b>2a6</b>	No cooking or fires.	5	5	0
<b>2a7</b>	No wading or swimming in reservoir except wading while using boots to launch boats in designated areas.	151	2	1
<b>2a8</b>	No wading or swimming in Tributary or Surface Waters, except in designated areas.	8	0	1
<b>2a9</b>	No organized sport activities.	0	0	0
<b>2a10</b>	Any violation of 350 CMR 11.09 can result in loss of fishing privileges.	0	0	0
<b>2a11</b>	No profanity or other disorderly conduct offensive to general public. No possession or drinking alcoholic beverages	18	0	0
<b>2a12</b>	No Motorized Vehicles. No recreational vehicles, except snowmobiles in designated areas. Motor vehicle parking in designated areas only. Operators of motor vehicles shall obey all regulatory signage unless otherwise directed. No willfully obstructing the free passage of vehicles or persons within the system.	21	4	8
<b>2a13</b>	No animals, except for horses and dogs at Ware River designated areas.	162	11	1
<b>2a14</b>	Bicycles, skis and other non motorized transportation permitted in designated areas only.	41	0	0
<b>2a15</b>	No landing aircraft or causing to descend except in an emergency.	0	0	0
<b>2a16</b>	No parades, games, fairs, bazaars, carnivals, fishing derbies, gifts or solicitation for raising funds without written approval.	0	0	0
<b>2a17</b>	No lotteries, raffles, gambling or games of chance. No possession of machinery for the former.	0	0	0
<b>2a18</b>	No groups of more than 25 people without written permit.	0	0	0
<b>2a19</b>	No engaging in business, sale or display of goods or wares without written permit.	0	0	0
<b>2a20</b>	No commercial signs or advertising.	0	0	0
<b>2a21</b>	No persons shall have possession of or discharge any weapon, firearm, fireworks or other explosive on or within the watershed system except at times and areas designated. No target shooting.	0	0	0
<b>2a22</b>	No hunting, shooting, or trapping animals except at designated times and areas.	3	0	3

<b>313 CMR 11.09</b>	<b>CMR</b>	<b># of Violations</b>	<b>Written Warning</b>	<b>Citation</b>
<b>2a23</b>	All persons within the watershed system shall obey the lawful directions of regulatory signs, police officers or persons in charge or of Federal or Commonwealth wardens or enforcement officers.	72	4	2
<b>2a24</b>	Any part of the watershed lands may be closed for the public access at any time.	94	3	18
<b>2a25</b>	The possession of all types of metal detectors or similar devices is prohibited on all of the Watershed System property.	8	0	0
<b>2d1</b>	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore of Wachusett Reservoir in areas designated by the commission or its designee.	63	0	0
<b>2d2</b>	Boating is prohibited in Wachusett Reservoir.	4	0	2
<b>2d3</b>	Fishing from the shoreline of the Reservoir shall be allowed only during a season designated by the Commission or its designee.	20	0	0
<b><u>Sudbury</u></b>				
<b>2 e 1</b>	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore of Sudbury Reservoir in areas designated by the commission or its designee.	27	0	0
<b>2 e 2</b>	Boating is prohibited on Sudbury Reservoir.	2	0	2
<b>TOTAL Violations</b>		<b>788</b>	<b>31</b>	<b>41</b>

**Watershed Ranger Activity, Quabbin/Ware Region  
FY2017**

**Visitor Contacts: 18,926**

**Violations: 437**

<b>313CMR 11.09</b>	<b>CMR</b>	<b># of Violations</b>	<b>Written Warning</b>	<b>Citation</b>
<b>1a</b>	No person shall take or divert water from watershed system	2	0	0
<b>2a1</b>	Entrance/Exit only through gates or designated areas.	0	0	0
<b>2a2</b>	Allowed on Watershed land 1 hour before sunrise to 1 hour after sunset	6	0	0
<b>2a3</b>	No powered boats except in designated areas.	0	0	0
<b>2a4</b>	No acts which may pollute the water system. No litter thrown or left.	4	0	0
<b>2a5</b>	All acts injuring the property are prohibited. No person shall injure, deface, destroy remove or carry off any property, including historic artifacts and natural materials. No removal of gravel, topsoil, stones, boulders or other material. No building or constructing any object or structure on property.	4	0	0
<b>2a6</b>	No cooking or fires.	0	0	0
<b>2a7</b>	No wading or swimming in reservoir except wading while using boots to launch boats in designated boat launch areas.	23	0	0
<b>2a8</b>	No wading or swimming in Tributary or Surface Waters, except in designated areas.	38	0	0
<b>2a9</b>	No organized sport activities except by written permission.	0	0	0
<b>2a10</b>	Any violation of 350 CMR 11.09 can result in loss of fishing privileges.	0	0	0
<b>2a11</b>	Breach of peace, profanity or other disorderly conduct offensive to general public. No possession or drinking alcoholic beverages	3	0	0
<b>2a12</b>	No Motorized Vehicles. No recreational vehicles, except snowmobiles in designated areas. Motor vehicle parking in designated areas only. Operators of motor vehicles shall obey all regulatory signage unless otherwise directed. No willfully obstructing the free passage of vehicles or persons within the system.	44	0	9
<b>2a13</b>	No animals, except for horses and dogs at Ware River designated areas.	84	2	0
<b>2a14</b>	Bicycles, skis and other non motorized transportation permitted in designated areas only.	25	0	0
<b>2a15</b>	No person shall bring, land or cause to descend any aircraft within the Watershed System except in an emergency.	1	0	0
<b>2a16</b>	No parades, games, fairs, bazaars, carnivals, fishing derbies, gifts or solicitation for raising funds without written approval.	0	0	0
<b>2a17</b>	No lotteries, raffles, gambling or games of chance. No possession of machinery, instruments or equipment for the former.	0	0	0
<b>2a18</b>	No groups of more than 25 people without written permit.	0	0	0
<b>2a19</b>	No engaging in business, sale or display of goods or wares without written permit.	0	0	0
<b>2a20</b>	No commercial signs or advertising.	0	0	0
<b>2a21</b>	No persons shall have possession of or discharge any weapon, firearm, fireworks or other explosive on or within the watershed system except at times and areas designated. No target shooting.	0	0	0
<b>2a22</b>	No hunting, shooting, or trapping animals except at designated times and areas.	0	0	0
<b>2a23</b>	All persons within the watershed system shall obey the lawful directions of regulatory signs, police officers or persons in charge or of Federal or Commonwealth wardens or enforcement officers.	116	0	0

<b>313CMR 11.09</b>	<b>CMR</b>	<b># of Violations</b>	<b>Written Warning</b>	<b>Citation</b>
<b>2a24</b>	Any part of the watershed lands may be closed for the public access at any time to protect the lands and waters.	0	0	0
<b>2a25</b>	The possession of all types of metal detectors or similar devices is prohibited on all of the Watershed System property.	7	0	0
<b>2b1</b>	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore in areas designated by the Commission or its designee. A valid state fishing or sporting license is required by any person renting or launching a boat at any commission facility subject to 313 CMR 11.09. Reasonable fees for the use of boats, for rental of outboard motors for fishing purposes, or use of Commission facilities including parking and boat ramps, may be charged by the Commission.	22	0	0
<b>2b2</b>	Persons permitted to fish from boats shall at all times be responsible for the sanitary conditions of the boat. Persons under 16 years of age must be accompanied by a person possessing a valid fishing license in order to boat on Quabbin Reservoir.	0	0	0
<b>2b3</b>	Only boats of a minimum length of 12 feet, and of a type considered safe by the Commission representative in charge, shall be used. No inboard motors, collapsible boats, sailboats, pontoon boats, square sterned canoes, or similar craft will be permitted in the water except in areas designated for boating by the Commission or its designee. Outboard motors shall have a rating of not more than ½ the BIA or OBC rated horsepower for the boat and shall not exceed 20 horsepower, except that outboard motors for Commission boats less than 14 feet six inches shall not exceed 10 horsepower. Boats less than 14 feet shall be limited to 3 occupants, and boats of that length and in excess thereof may be licensed to carry 4 occupants. No boats shall carry more than 4 occupants. Canoes and jon boats of a minimum of 12 feet, and a type considered safe by the Commission representative in charge, shall be used only in areas designated for boating by the Commission on Pottapaug Pond above the regulating dam and at Gate 31 above the regulating dam. Canoes less than 16 feet and jon boats less than 14 feet six inches in length will be limited to 2 occupants, and canoes and jon boats in excess thereof may be licensed to carry 3 occupants. All boats must be in compliance with current Commonwealth Boating Laws. All boats must be clean and contain no refuse of any kind. Commission personnel shall have the right to inspect all private boats launched at Commonwealth facilities and may deny access in order to protect water quality or safety of occupants. Chock blocks must be used on vehicles when removing boats from the reservoir.	2	0	0
<b>2b4</b>	No person shall operate a motor boat at a speed other than responsible and proper or in such a manner as to annoy or endanger the occupants of other boats.	0	0	0
<b>2b5</b>	Fishing from the shorelines of the Quabbin Reservoir and its Tributaries within the Watershed System or from boats shall be allowed only during the season designated by the Commission or its designee. All privately owned boats, motors and other equipment must be removed from the property of the Commission each day.	3	0	0
<b>2b6</b>	Boats shall not leave the mooring areas before dawn and must at the time posted at each mooring area. The beaching of boats at any point except at the designated mooring and landing areas is strictly prohibited except in cases of extreme emergency.	42	0	0
<b>TOTAL Violations</b>		<b>437</b>	<b>2</b>	<b>9</b>

# **FY2017 Final Expenditures**

DCR Division of Water Supply Protection  
Office of Watershed Management  
FY17 Expenditures

Object Class	Object	Object Name	Total
AA	A01	Salaries: Inclusive	\$9,112,039.57
	A06	Stand -By-Pay	
	A07	Shift Differential Pay	\$23,416.34
	A08	Overtime Pay	\$262,321.78
	A10	Holiday Pay	\$36,783.80
	AA1	Salaries-Supplemental	\$22,506.36
	A12	Sick-Leave Buy Back	\$51,059.17
	A13	Vacation-In-Lieu	\$29,296.92
	A14	Stipends, Bonus Pay and Awards	\$30,070.40
AA Total			\$9,567,494.34
BB	B01	Other Out Of State Travel - INCLUSIVE: AIRFARE, HOTEL, LODGING	\$3,372.16
	B02	In-State Travel	\$2,103.54
	B03	Overtime Meals	\$0.00
	B05	Conference, Training, Registration and Membership Dues and L	\$6,339.60
	B10	Exigent Job Related Expenses	\$64.05
	B11	Employer Refund of Non-Tax Benefits	\$6.24
	B91	Employ Reimbursement Accounts Payable	\$208.88
BB Total			\$12,094.47
CC	C04	Contracted Seasonal Employees	\$50,913.27
CC Total			\$50,913.27
DD	D09	Fringe Benefit Cost Recoupment (payroll tax 1.59%)	\$3,166,278.44
	D09	Fringe Benefits Costs Recoupment (27.27%)	\$61,304.55
	D15	Workers' Compensation Chargebacks	\$100,000.00
	D21	Health Ins Costs of Employ/Leave in Excess of 1 Yr Chgbak	\$16,020.84
DD Total			\$3,343,603.83
EE	E01	Office & Administrative Supplies	\$8,175.31
	E02	Printing Expenses & Supplies	\$7,469.48
	E04	Central Reprographics Chargeback	\$0.00
	E06	Postage	\$8,250.00
	E12	Subscriptions, Memberships & Licensing Fees	\$918.05
	E13	Advertising Expenses	\$1,925.71
	E14	Exhibits/Displays	\$992.77
	E15	Water Treatment - Office Water	\$1,149.86
	E19	Fees, Fines, Licenses, Permits & Chargebacks	\$26,279.27
	E20	Motor Vehicle Chargeback	\$27,666.00
	E22	Temp Use Space/Confer-Incidental Includes Reservation Fees	\$0.00
	E53	S&J: Non-reportable to claimant, sole payee	\$10,000.00
	EE2	Conference, Training and Registration Fees	\$0.00
EE Total			\$92,826.45
FF	F01	Food, Beverages & Preservation	\$90.84
	F03	Laundry and Cleaning Supplies	\$0.00
	F05	Laboratory Supplies	\$3,724.76
	F06	Medical & Surgical Supplies	\$3,979.26
	F09	Clothing & Footwear	\$29,971.92
	F11	Laundry & Cleaning Supplies	\$8,598.01
	F13	Live Animals & Related Supplies	\$648.65
	F16	Library and Teaching Supplies and Materials	\$66.87
	F18	Recreation, Religious & Social Supplies & Materials	\$14,882.46
	F19	Manufacturing Supply & Materials & Raw Materials	\$2,511.43
	F21	Navigational & Nautical Supplies	\$9,624.68
	F24	Motor Vehicle Maintenance and Repair Parts	\$90,431.89
	F27	Law Enforcement & Security Supplies	\$3,160.26
FF Total			\$167,691.03
GG	G03	Electricity	\$54,014.89
	G05	Fuel For Vehicles	\$95,823.51
	G06	Fuel For Buildings	\$93,203.78
	G08	Sewage Disposal & Water	\$5,215.09
	G11	Natural Gas	\$547.89
	GG1	Natural Gas Supply	(\$2.45)
GG Total			\$248,802.71
HH	H09	Attorneys/Legal Services	\$5,500.00
	HH1	Financial Services	\$45,080.15
	HH2	Engineering, Research and Scientific Services	\$91,070.03
	HH4	Health and Safety Services	\$10,087.50
HH Total			\$151,737.68
JJ	J27	Laundry Services	\$9,061.44
	J33	Photographic & Micrographic Services	\$0.00
	J44	Surveyors	\$887.15
	J50	Instructors/lecture/Trainers	\$10,834.23
	J25	Laboratory and Pharmaceutical Services	\$1,120.00
	JJ1	Legal Support Services	\$17,797.50
JJ Total			\$39,700.32



DCR Division of Water Supply Protection  
Office of Watershed Management  
FY17 Expenditures

Object Class	Object	Object Name	Total
KK	K02	Educational Equipment	\$4,885.18
	K03	Programmatic Facility Equipment	\$21,666.99
	K04	Motorized Vehicle Equipment	\$622,511.77
	K05	Office Equipment	\$1,931.55
	K06	Printing, Photocopying, and Micrographics Equipment	\$0.00
	K07	Office Furnishings	\$303.60
	K10	Law Enforcement & Security Equipment	\$0.00
	K11	Heavy Equipment	\$77,440.00
KK Total			\$728,739.09
LL	L11	Heavy Equipment Lease-Purchase	\$29,292.48
	L23	Programmatic Facility Equipment Rental or Lease	\$28,947.42
	L24	Motorized Vehicle Equip. Rental or Lease	\$205.80
	L25	Office Equipment Rental or Lease	\$2,437.32
	L26	Printing/Photocopy & Micrographics Equip Rent/Lease	\$13,483.63
	L31	Heavy Equipment Rental or Lease	\$2,036.67
	L42	Educational Equipment Maintenance & Repair	\$0.00
	L44	Motorized Vehicle Equipment Maintenance & Repair	\$9,607.68
	L45	Office Equipment Maintenance & Repair	\$651.34
	L46	Print, Photocopying & Micrograph Equipment Maint/Repair	\$4,711.49
	L50	Law Enforcemt/Security Equipment Maintenance/Repair	\$0.00
	L51	Heavy Equipment Maintenance/Repair	\$19,228.64
	L63	Programmatic Equipment Maintenance & Repair	\$5,531.53
LL Total			\$116,134.00
NN	N15	Building/Vertical Structure Construction	\$0.00
	N16	Major Const/Renovation Bldg & Land Improvements	\$94,102.00
	N17	Major Building Maintenance and Land Improvements	\$28,734.65
	N19	Land Acquisition and Eminent Domain	\$996.18
	N22	Highway Horizontal/Lateral Maintenance & Improvements	\$231,903.61
	N23	Highway Maintenance Materials	\$11,026.95
	N41	State Park & Recreation Facilities Construction	\$521,889.51
	N50	Non-Major Facility Infrastructure Maintenance and Repair	\$86,154.37
	N52	Facility Infrastructure Maintenance & Repair Tools & Supplie	\$153,779.92
	N60	Lawn & Grounds Equipment Maint & Repair	\$824.76
	N61	Lawn and Grounds Equipment	\$70,012.17
	N64	Garden Expenses, Tools and Supplies	\$24,720.86
	N71	Exterminators/Integrated Pest Management	\$3,801.25
	N72	Hazardous Waste Removal Services	\$3,871.50
	N73	Non-Hazardous Waste Removal Services	\$25,578.86
	N74	Snow Removal and Groundskeeping Services	\$20,028.69
	N98	Reimbursement for Travel/Other Expense Infrs Projects	\$0.00
	NN1	Engineering, Research and Scientific Services	\$246,473.94
NN Total			\$1,523,899.22
TT	T04	Payments and Refunds	\$124,460.00
TT Total			\$124,460.00
UU	U01	Telecommunications Services Data	\$0.00
	U02	Telecommunications Services - Voice	\$47,443.02
	U03	Software & Information Technology Licenses (IT)	\$3,234.38
	U04	Information Technology (IT) Chargeback	\$8,356.50
	U05	Information Technology (IT) Professionals	\$0.00
	U06	Information Technology (IT) Cabling	\$0.00
	U07	Information Technology (IT) Equipment	\$122,485.26
	U09	Information Technology (IT) Equip Rental Or Lease	\$0.00
	U10	Information Tech (IT) Equipment Maintenance & Repair	\$0.00
UU Total			\$181,519.16
Grand Total			\$16,349,615.57

# **FY2017 Final Revenue**

DCR Division of Water Supply Protection  
Office of Watershed Management  
FY2017 Revenue Summary

Revenue Budget	Description	AP 1	AP 2	AP 3	AP 4	AP 5	AP 6	Total Collected Revenue Period 1-6
2010/0300/WMP1/DCR/0500	INTERMENT FEES	\$0.00	\$400.00	\$400.00	\$75.00	\$906.00	\$400.00	\$2,181.00
2010/0300/WMP1/DCR/3148	FISH & BOATING/DEER HUNT	\$41,403.00	\$31,614.00	\$20,235.00	\$8,790.00	\$0.00	\$0.00	\$102,042.00
2010/0300/WMP1/DCR/4000	RENTS	\$0.00	\$0.00	\$5,436.04	\$0.00	\$0.00	\$0.00	\$5,436.04
2010/0300/WMP1/DCR/4500	FORESTRY SALES	\$9,100.00	\$28,000.00	\$5,500.00	\$29,467.00	\$50,102.80	\$55,303.50	\$177,473.30
2010/0300/WMP1/DCR/6900	MISCELLANEOUS	\$100.00	\$100.00	\$0.00	\$0.00	\$0.00	\$0.00	\$200.00
2010/0300/WMP1/DCR/6901	PRIOR YEAR REFUNDS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2010/0300/WMP1/DCR/6995	HYDROPOWER/TR LINES	\$944.99	\$20,476.09	\$24,034.71	\$36,590.59	\$28,555.12	\$73,970.79	\$184,572.29
<b>TOTALS</b>		<b>\$51,547.99</b>	<b>\$80,590.09</b>	<b>\$55,605.75</b>	<b>\$74,922.59</b>	<b>\$79,563.92</b>	<b>\$129,674.29</b>	<b>\$471,904.63</b>

Revenue Budget	Description	AP 7	AP 8	AP 9	AP 10	AP 11	AP 12	Total Collected Revenue
2010/0300/WMP1/DCR/0500	INTERMENT FEES	\$578.00	\$231.00	\$0.00	\$231.00	\$1,744.00	\$755.00	\$5,720.00
2010/0300/WMP1/DCR/3148	FISH & BOATING/DEER HUNT	\$0.00	\$0.00	\$1,600.00	\$30,818.00	\$37,022.00	\$52,659.00	\$224,141.00
2010/0300/WMP1/DCR/4000	RENTS	\$0.00	\$0.00	\$0.00	\$0.00	\$428.41	\$75.00	\$5,939.45
2010/0300/WMP1/DCR/4500	FORESTRY SALES	\$98.00	\$17,644.55	\$0.00	\$16,753.00	\$7,430.00	\$62,973.00	\$282,371.85
2010/0300/WMP1/DCR/6900	MISCELLANEOUS	\$50.00	\$505.00	\$2,400.00	\$0.00	\$700.00	\$0.00	\$3,855.00
2010/0300/WMP1/DCR/6901	PRIOR YEAR REFUNDS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2010/0300/WMP1/DCR/6995	HYDROPOWER/TR LINES	\$59,553.51	\$26,583.58	\$10,952.44	\$20,486.91	\$12,500.88	\$87.36	\$314,736.97
<b>TOTALS</b>		<b>\$60,279.51</b>	<b>\$44,964.13</b>	<b>\$14,952.44</b>	<b>\$68,288.91</b>	<b>\$59,825.29</b>	<b>\$116,549.36</b>	<b>\$836,764.27</b>

**Notes: Does not include Special Assessment Revenues-MWRA Assessment & Debt Service Reimbursement.**

<u>Category</u>	<u>FY17 Projected</u>	<u>FY17 Actual</u>
Hydroelectric Power/ Transmission Lines	\$540,000	\$314,737
Fishing and Recreation	\$240,000	\$224,141
Forestry	\$185,000	\$282,372
Miscellaneous	\$50,000	
(Internment Fees, rents)		\$15,514
<b>TOTAL</b>	<b>\$1,015,000</b>	<b>\$836,764</b>

# **FY2017 Final Land Acquisition**

**DCR Division of Water Supply Protection  
FY2017 Office of Watershed Management Land Acquisitions**

Approximately \$2 million was spent on land acquisition in FY17. The Federal Forest Legacy “Quabbin to Wachusett” (Q2W) program provide just under half the funds necessary to purchase over half the total acreage, adding over 450 acres of protected land to the watershed system without using ratepayer money. An additional 16 acres were also obtained as gifts in FY17.

Owner	Town	File #	Acres	Fee/ WPR	Date Recorded	MWRA/ Q2W/ Gift	Price
<b><i>Quabbin Reservoir and Ware River Watersheds</i></b>							
Ahava Realty Trust	Petersham	W-001175	5.1	Fee	3/22/2017	MWRA	\$40,000
Caouette	Petersham	W-000916	32.5	WPR	9/29/2016	MWRA	\$201,000
Coolidge	Petersham	W-000970	173.6	WPR	11/2/2016	MWRA	\$400,000
Cronholm	Hubbardston	W-001136	73.2	Fee	9/12/2016	Q2W	\$135,000
Curtis Mill	Hubbardston	W-001067	14.1	Fee	11/9/2016	Q2W	\$45,000
East Quabbin Land Trust (Bothwell/Lofgren)	Hubbardston	W-001135	94.3	WPR	7/19/2016	Q2W	\$130,000
Hutchinson	Petersham	W-001173	148.1	WPR	5/3/2017	Q2W	\$247,500*
Twohey	Phillipston	W-001077	49.0	WPR	1/27/2017	Q2W	\$240,000
Wheeler	Hubbardston	W-001189	3.3	Fee	1/13/2017	Gift	\$0
<b><i>Sub-Total Quabbin and Ware Watersheds</i></b>			593.2				\$1,438,500
<b><i>Wachusett Reservoir Watershed</i></b>							
Boys & Girls Club, Inc.	Sterling	W-001176	6.2	Fee	2/24/2017	MWRA	\$192,000
Demetry/Stafford	Holden	W-001006	12.5	WPR	2/28/2017	Gift	\$0
Dubois	West Boylston	W-000504	5.7	Fee	5/24/2017	MWRA	\$242,000
Kessler/Marro	Princeton	W-001075	74.0	WPR	2/28/2017	Q2W	\$60,000
Maki	Sterling	W-000494	12.7	Fee	12/21/2016	MWRA	\$130,000
<b><i>Sub-Total Wachusett Watershed</i></b>			111.1				\$624,000
<b>TOTAL FY17 LAND ACQUISITIONS</b>			<b>704.3</b>				<b>\$2,062,500</b>

Sub-Total MWRA	235.8	\$1,205,000
Sub-Total Q2W	452.7	\$857,500
Sub-Total Gifts	15.8	\$0
Sub-Total Fee Acquisitions	120.3	\$784,000
Sub-Total WPR Acquisitions	584.0	\$1,278,500

\* Hutchinson cost share with EOEEA: federal funds - \$169,400; EOEEA Landscap Partnership - \$78,100

**FY2017 Final**

**Payments in Lieu of Taxes**

**DCR Division of Water Supply Protection  
Office of Watershed Management**

**FY2017 Payments in Lieu of Taxes (PILOT)**

**The total PILOT paid under MGL c. 59, s. 5G for Fiscal Year 2017 was \$8,190,985.91**

FY2017 PILOT utilized the values established by the 2013 State Owned Land Revaluation conducted by the Department of Revenue (DOR). This quadrennial analysis established values of all state owned land as of January 1, 2013.

Those towns that had undertaken a local revaluation in 2016, however, were required to have their valuation calculated using the “redetermination formula” of  $(2015 \text{ PILOT}/2016 \text{ Tax Rate}) \times 1000$ . This mandate impacted 15 communities: Barre, Clinton, Hardwick, Hubbardston, Marlborough, New Salem, Northborough, Petersham, Phillipston, Princeton, Southborough, Sterling, Templeton, Wendell, and Westborough. This redetermination did not have as significant impact on PILOT as in past years; only Southborough saw an increase greater than 3% from FY17.

The hold harmless clause maintained payment levels in FY17 for most of the remaining watershed communities, totaling \$322,058. The communities that had increases in PILOT were due to higher local tax rates and previous increases in property valuations due to the redetermination formula.

This 0.8% increase from FY15 PILOT is less than the 3% estimated increase provided to MWRA in the FY16 Work Plan.



Department of Conservation and Recreation  
Division of Water Supply Protection  
Office of Watershed Management  
FY17 Payments in Lieu of Taxes  
Final January 2017

Community	Local Revaluation Year	2013 DOR Property Valuation	FY15 PILOT	FY16 Property Valuation	FY16 Tax Rate	FY16 PILOT	FY17 Property Valuation	Difference 2017-2013 Valuation	% Valuation Difference	FY17 Tax Rate	Minimum FY17 PILOT	FY17 PILOT	Increase	% Increase	Hold Harmless
Boylston	2017	\$29,168,700	\$595,939	\$34,229,679	\$16.37	\$595,939	\$34,229,679	\$5,060,979	17.4%	\$16.12	\$551,782.42	\$595,938.71	\$0	0.0%	\$44,156
Framingham	2018	\$4,993,300	\$261,931	\$6,717,900	\$37.98	\$261,931	\$6,717,900	\$1,724,600	34.5%	\$36.52	\$245,337.70	\$261,930.91	\$0	0.0%	\$16,593
Holden	2017	\$30,321,600	\$919,616	\$50,751,411	\$17.25	\$919,616	\$50,751,411	\$20,429,811	67.4%	\$17.59	\$892,717.32	\$919,615.57	\$0	0.0%	\$26,898
Hubbardston	2016	\$18,954,300	\$318,970	\$18,954,300	\$15.90	\$318,970	\$20,060,988	\$1,106,688	5.8%	\$15.23	\$305,528.85	\$318,969.72	\$0	0.0%	\$13,441
New Salem	2016	\$22,639,000	\$455,044	\$22,639,000	\$22.99	\$520,471	\$19,793,123	-\$2,845,877	-12.6%	\$21.90	\$433,469.40	\$520,470.61	\$0	0.0%	\$87,001
New Salem - Annexed Lands	2016	\$8,769,200	\$176,261	\$8,769,200	\$22.99	\$201,604	\$7,666,852	-\$1,102,348	-12.6%	\$21.90	\$167,904.05	\$201,603.91	\$0	0.0%	\$33,700
Orange	2017	\$125,500	\$4,188	\$201,635	\$21.70	\$4,375	\$201,635	\$76,135	60.7%	\$21.23	\$4,280.70	\$4,375.47	\$0	0.0%	\$95
Pelham	2018	\$11,306,000	\$331,392	\$15,939,952	\$21.21	\$338,086	\$15,939,952	\$4,633,952	41.0%	\$21.00	\$334,739.00	\$338,086.39	\$0	0.0%	\$3,347
Pelham - Annexed Lands	2018	\$813,200	\$37,342	\$1,796,163	\$21.21	\$38,097	\$1,796,163	\$982,963	120.9%	\$21.00	\$37,719.41	\$38,096.61	\$0	0.0%	\$377
Petersham	2016	\$10,036,800	\$296,722	\$10,036,800	\$16.42	\$296,722	\$18,070,744	\$8,033,944	80.0%	\$16.19	\$292,565.34	\$296,721.61	\$0	0.0%	\$4,156
Petersham - Annexed Lands	2016	\$5,291,700	\$203,306	\$5,291,700	\$16.42	\$203,306	\$12,381,594	\$7,089,894	134.0%	\$16.19	\$200,458.01	\$203,305.78	\$0	0.0%	\$2,848
Phillipston	2016	\$171,600	\$11,913	\$171,600	\$16.89	\$11,913	\$705,313	\$533,713	311.0%	\$16.68	\$11,764.63	\$11,912.74	\$0	0.0%	\$148
Princeton	2016	\$13,562,700	\$255,315	\$13,562,700	\$17.80	\$255,315	\$14,343,517	\$780,817	5.8%	\$17.78	\$255,027.74	\$255,314.61	\$0	0.0%	\$287
Rutland	2017	\$30,734,100	\$525,860	\$26,821,624	\$17.37	\$525,860	\$26,821,624	-\$3,912,476	-12.7%	\$18.32	\$491,372.16	\$525,860.45	\$0	0.0%	\$34,488
Sterling	2016	\$40,938,300	\$707,823	\$40,938,300	\$18.33	\$750,399	\$38,615,560	-\$2,322,740	-5.7%	\$18.03	\$696,238.54	\$750,399.04	\$0	0.0%	\$54,160
Templeton	2016	\$48,900	\$1,082	\$48,900	\$16.47	\$1,082	\$65,706	\$16,806	34.4%	\$16.12	\$1,059.18	\$1,082.18	\$0	0.0%	\$23
Wendell	2016	\$1,255,300	\$24,077	\$1,255,300	\$19.38	\$24,328	\$1,242,345	-\$12,955	-1.0%	\$19.31	\$23,989.69	\$24,327.71	\$0	0.0%	\$338
Hardwick - Annexed Lands	2016	\$36,900	\$928	\$36,900	\$15.77	\$928	\$58,838	\$21,938	59.5%	\$16.00	\$941.41	\$941.41	\$14	1.5%	\$0
Leominster	2018	\$142,400	\$8,561	\$440,369	\$19.58	\$8,622	\$440,369	\$297,969	209.2%	\$19.73	\$8,688.49	\$8,688.49	\$66	0.8%	\$0
Westborough	2016	\$2,626,000	\$50,656	\$2,626,000	\$17.77	\$50,656	\$2,850,621	\$224,621	8.6%	\$17.80	\$50,741.06	\$50,741.06	\$86	0.2%	\$0
Ludlow	2018	\$197,900	\$9,820	\$567,947	\$18.13	\$10,297	\$567,947	\$370,047	187.0%	\$18.53	\$10,524.06	\$10,524.06	\$227	2.2%	\$0
Berlin	2017	\$1,804,700	\$46,426	\$1,941,695	\$23.47	\$46,426	\$1,941,695	\$136,995	7.6%	\$24.21	\$47,008.43	\$47,008.43	\$583	1.3%	\$0
Belchertown - Annexed Lands	2018	\$1,491,400	\$49,763	\$2,781,599	\$17.97	\$49,985	\$2,781,599	\$1,290,199	86.5%	\$18.20	\$50,625.10	\$50,625.10	\$640	1.3%	\$0
Ware	2018	\$9,795,000	\$192,472	\$9,304,834	\$20.21	\$192,472	\$9,304,834	-\$490,166	-5.0%	\$20.77	\$193,261.40	\$193,261.40	\$790	0.4%	\$0
Northborough	2016	\$5,855,800	\$102,158	\$5,855,800	\$17.17	\$102,158	\$5,949,792	\$93,992	1.6%	\$17.39	\$103,466.89	\$103,466.89	\$1,309	1.3%	\$0
Hardwick	2016	\$7,281,200	\$115,771	\$7,281,200	\$15.77	\$115,771	\$7,341,223	\$60,023	0.8%	\$16.00	\$117,459.56	\$117,459.56	\$1,688	1.5%	\$0
Clinton	2016	\$6,489,300	\$202,726	\$6,489,300	\$31.45	\$204,088	\$6,445,969	-\$43,331	-0.7%	\$31.95	\$205,948.72	\$205,948.72	\$1,860	0.9%	\$0
Marlborough	2016	\$1,367,000	\$109,727	\$1,367,000	\$25.69	\$109,727	\$4,271,202	\$2,904,202	212.5%	\$26.41	\$112,802.46	\$112,802.46	\$3,075	2.8%	\$0
Belchertown	2018	\$11,598,400	\$252,696	\$14,124,967	\$17.97	\$253,826	\$14,124,967	\$2,526,567	21.8%	\$18.20	\$257,074.40	\$257,074.40	\$3,249	1.3%	\$0
Oakham	2017	\$8,930,200	\$128,162	\$9,368,581	\$13.90	\$130,223	\$9,368,581	\$438,381	4.9%	\$14.25	\$133,502.28	\$133,502.28	\$3,279	2.5%	\$0
Ware - Annexed Lands	2018	\$6,388,500	\$158,544	\$8,068,398	\$20.21	\$163,062	\$8,068,398	\$1,679,898	26.3%	\$20.77	\$167,580.62	\$167,580.62	\$4,518	2.8%	\$0
Shutesbury	2018	\$6,056,800	\$283,212	\$13,154,285	\$22.08	\$290,447	\$13,154,285	\$7,097,485	117.2%	\$22.76	\$299,391.54	\$299,391.54	\$8,945	3.1%	\$0
Barre	2016	\$9,506,900	\$177,209	\$9,506,900	\$17.80	\$177,209	\$9,955,540	\$448,640	4.7%	\$18.70	\$186,168.60	\$186,168.60	\$8,960	5.1%	\$0
Southborough	2016	\$14,119,400	\$284,149	\$14,119,400	\$15.82	\$284,149	\$17,961,373	\$3,841,973	27.2%	\$16.38	\$294,207.30	\$294,207.30	\$10,058	3.5%	\$0
West Boylston	2017	\$18,595,600	\$666,856	\$36,360,723	\$18.45	\$670,855	\$36,360,723	\$17,765,123	95.5%	\$18.80	\$683,581.59	\$683,581.59	\$12,726	1.9%	\$0
<b>TOTAL</b>		\$341,413,600	\$7,966,612			\$8,128,913	\$420,352,064	\$78,938,464	23.1%		\$7,868,928.04	\$8,190,985.91	\$62,073	0.8%	\$322,058

- NOTES:
- MA Department of Revenue (DOR), per MGL c. 58, revalues all State Owned Land (SOL) every four years. DOR determines a valuation based upon what each agency owns that is legally reimbursable by either the legislature through municipal aid or by DCR/MWRA through the watershed PILOT program. DOR must complete these revaluations by June with a subsequent short period for appeals; any issue not resolved in this appeal period then goes to the Appellate Tax Board. Watershed PILOT utilizes the DOR revaluation figure in the subsequent fiscal year from the year they are determined. In other words, the 2013 SOL Revaluation was utilized starting in FY2014. The next SOL Revaluation is set for January 1, 2017, which will be effective in FY18.
  - Watershed PILOT, per MGL c. 59 s.5G, is determined by multiplying the DOR valuation by the local commercial tax rate. There are two important provisions that subsequently impact these calculations and payments: Hold Harmless and Redetermination.
  - "Hold Harmless" is a provision in the legislation that requires any payment never to be less than the previous year's payment. Therefore, if either valuations or tax rates drop, the municipality is guaranteed a consistent payment.
  - The "Redetermination Formula" is a provision in the legislation that requires the municipal valuation to be calculated based on a formula the year after a local revaluation. Local revaluations occur every three years and do not necessarily align with the DOR's quadrennial SOL revaluation. Therefore, in the years between the SOL revaluations, if a town has a local revaluation, then a specified formula must be used to derive the valuation for PILOT calculations. This "redetermination formula" takes the PILOT amount from the year before the local revaluation and divides it by the local tax rate from the year of the local revaluation multiplied by 1,000. If a local revaluation occurred in 2016, then for FY17, the valuation is: (2015 PILOT/2016 Tax Rate)\*1000.